MHC-551/G55

SERVICE MANUAL

AEP Model
UK Model
MHC-551

E Model
Tourist Model
MHC-G55

• MHC-551/G55 are composed of following models.
As for the service manual, it is issued for each component model, then, please refer to it.

COMPONENTS MODEL NAME FOR MHC-551/G55

	MHC-551/G55
COMPACT DISC DECK RECEIVER SYSTEM	HCD-H551
SPEAKER SYSTEM	SS-H551

SPECIFICATIONS

General

Power requirements
AEP,UK,German,Italian,East European models :
220 – 230V AC, 50/60Hz
Malaysia model :
220 – 240V AC, 50/60Hz
Thailand model :
220V AC, 50/60Hz
OTHER models :
110 – 120V or 220 – 240V AC, 50/60Hz
Adjustable with the voltage selector

Power consumption
67W

Supplied accessories

AM loop aerial (1)
Remote RM-SD50 (1)
Sony SUM-3 (NS) batteries (2)
FM lead aerial (1)

Design and specifications are subject to change without notice.

COMPACT Hi-Fi STEREO SYSTEM

SONY®

PARTS LIST

NOTE :
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- Abbreviations

IT	: Italian model	HK	: Hong Kong model
G	: German model	TW	: Taiwan model
EE	: East European model	IA	: Indonesian model
EA	: Saudi Arabia model	TH	: Thailand model
MY	: Malaysia model	JE	: Tourist model
SP	: Singapore model		

	Part No.	Description	Remark
		ACCESSORIES & PACKING MATERIALS	
	1-501-374-11	ANTENNA, LOOP	
	1-501-594-11	ANTENNA (FM) (AEP, UK, G, IT, EE)	
	1-501-659-11	ANTENNA (FM) (E, EA, MY, SP, HK, TH, TW, JE)	
	1-501-659-41	ANTENNA (FM) (IA)	
	3-810-948-11	MANUAL, INSTRUCTION (ENGLISH, FRENCH, SPANISH, CHINESE) (E, EA, MY, SP, HK, TW)	
	3-810-948-21	MANUAL, INSTRUCTION (ARABIC) (E, EA)	
	3-810-948-31	MANUAL, INSTRUCTION (ENGLISH, PORTUGUESE, RUSSIAN) (JE)	
	3-810-948-41	MANUAL, INSTRUCTION (ENGLISH) (UK)	
	3-810-948-51	MANUAL, INSTRUCTION (ENGLISH, FRENCH, SPANISH, PORTUGUESE) (AEP)	
	3-810-948-61	MANUAL, INSTRUCTION (GERMAN) (G)	
	3-810-948-71	MANUAL, INSTRUCTION (GERMAN, DUTCH, ITALIAN) (AEP, IT)	
	3-810-948-81	MANUAL, INSTRUCTION (DANISH, FINNISH, SWEDISH) (AEP)	
	3-810-948-91	MANUAL, INSTRUCTION (ENGLISH, POLISH, RUSSIAN) (EE)	
	3-856-279-11	MANUAL, INSTRUCTION (ENGLISH, FRENCH, SPANISH, CHINESE) (IA)	
	3-856-776-11	MANUAL, INSTRUCTION (ENGLISH, THAI) (TH)	
	4-979-371-01	COVER, BATTERY (for RM-SD50)	
*	4-981-032-01	CUSHION (FRONT) (HCD)	
*	4-981-033-01	CUSHION (REAR) (HCD)	
*	4-981-329-01	CUSHION (SS)	
*	4-982-979-01	INDIVIDUAL CARTON (E, MY, SP, HK, TW)	
*	4-982-980-01	INDIVIDUAL CARTON (EA, JE)	
*	4-982-981-01	INDIVIDUAL CARTON (AEP, UK, G, IT, EE)	
*	4-984-120-01	INDIVIDUAL CARTON (HCD) (TH)	
*	4-984-335-01	INDIVIDUAL CARTON (HCD) (IA)	
	8-917-537-90	REMOTE COMMANDER (RM-SD50)	

Sony Corporation
Consumer A&V Products Company
Home A&V Products Div.

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HCD-H551

SERVICE MANUAL

AEP Model
UK Model
E Model
Tourist Model

HCD-H551 is the tuner, deck, CD and amplifier section in MHC-G55/551.

Photo: E model

Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
"DOLBY" and the double-D symbol ⧈ are trademarks of Dolby Laboratories Licensing Corporation.

CD SECTION	Model Name Using Similar Mechanism	NEW
	CD Mechanism Type	CDM28-5BD19
	Base Unit Type	BU-5BD19
	Optical Pick-up Type	KSS-213BA/F-NP
TAPE DECK SECTION	Model Name Using Similar Mechanism	HCD-H501
	Tape Transport Mechanism Type	TCM-220WR2E

SPECIFICATIONS

CD player section

System: Compact disc and digital audio system
Laser: Semiconductor (λ = 780nm)
Emission duration: continuous
Laser output: Max 44.6 μW*
*This output is the value measured at a distance of 200mm from the objective lens surface on the Optical Pick-up Block with 7mm aperture.
Wavelength: 780 – 790 nm
Frequency response: 2 Hz – 20 kHz (±0.5 dB)
Signal-to-noise ratio: More than 90 dB
Dynamic range: More than 90 dB

Tuner section

FM stereo, FM/AM superheterodyne tuner

FM tuner section

East European model:
65.0 – 78.0 MHz,
87.5 – 108.0 MHz
Tourist model:
76.0 – 108.0 MHz
Other models:
87.5 – 108.0 MHz
Aerial: FM lead aerial
Aerial terminals: 75 ohm unbalanced
Intermediate frequency: 10.7 MHz

AM tuner section

Tuning range
German, Italian models:
AM: 531 – 1,602 kHz (with the interval set at 9 kHz)
AEP, UK, East European models:
MW: 531 – 1,602 kHz (with the interval set at 9 kHz)
LW: 153 – 279 kHz (with the interval set at 3 kHz)
Other models:
MW: 531 – 1,602 kHz (with the interval set at 9 kHz)
530 – 1,710 kHz (with the interval set at 10 kHz)
SW: 5.95 – 17.90 MHz

— Continue on next page —

MICROFILM

COMPACT DISC DECK RECEIVER

SONY®

Aerial AM loop aerial,
External aerial terminals
Intermediate frequency
450 kHz

Amplifier section

AEP, UK, German, Italian, East European models:
DIN power output
20 W + 20 W (6 ohms, at 1 kHz, DIN)
Continuous RMS power output
30W+30W (6 ohms; at 1kHz, 10% THD)
Music power output
40 W + 40 W (6 ohms, at 1 kHz, 10% THD)
E, Saudi Arabia, Hong Kong, Singapore, Malaysia, Taiwan, Tourist, Thailand, Indonesian models:
Peak music power output
400 W
Continuous RMS power output
30 W + 30 W (6 ohms at 1 kHz, 10% THD)

Inputs
VIDEO IN (phono jacks):
Voltage 250 mV, impedance 47 kilohms
MIX MIC (phone jacks):
ensitivity 1 mV, impedance 10 kilohms
Outputs
PHONES (stereo phone jack):
accepts headphones of 8 ohms or more.
SPEAKER: accepts impedance of 6 to 16 ohms.
E, Saudi Arabia, Hong Kong, Singapore, Malaysia, Taiwan, Tourist, Thailand, Indonesian models:
SUPPER WOOFER:
Voltage 1 V, impedance 1 kilohms

Tape player section

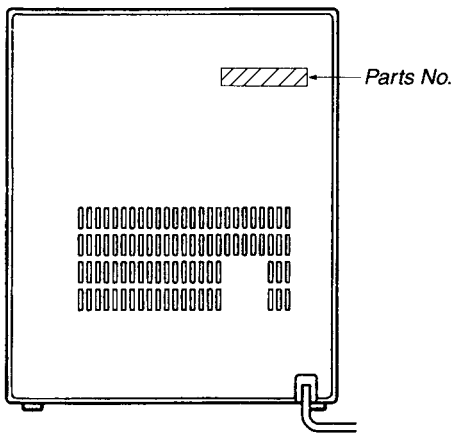
Recording system
4-track 2-channel stereo
Frequency response
(DOLBY NR OFF)
40 - 13,000 Hz (±3 dB), using Sony TYPE I cassette
40 - 14,000 Hz (±3 dB), using Sony TYPE II cassette
Wow and flutter
±0.15% W.Peak (IEC)
0.1% W.RMS (NAB)
±0.2% W.Peak (DIN)

General

Power requirements
AEP, UK, German, Italian, East European models:
220 – 230 V AC, 50/60 Hz
Malaysia model:
220 – 240 V AC, 50/60 Hz
Thailand model:
220 V AC, 50/60 Hz
Other models:
110 – 120 V or 220 – 240 V AC, 50/60 Hz
Adjustable with the voltage selector
Power consumption
67 W
Dimensions Approx. 280 x 325 x 360 mm (11 1/8 x 12 7/8 x 14 1/4 in) (w/h/d)
incl. projecting parts and controls
Mass Approx. 7.5 kg (16 lb 9 oz)

Design and specifications are subject to change without notice.

MODEL IDENTIFICATION
— BACK PANEL —



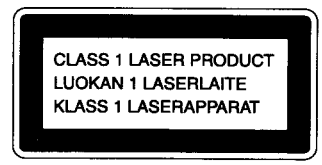
MODEL	PARTS No.
AEP model	4-979-273-0□
UK model	4-979-273-1□
German model	4-979-273-2□
Italian model	4-979-273-3□
East European model	4-979-273-4□
E model	4-979-274-0□
Saudi Arabia, Taiwan model	4-979-274-1□
Malaysia model	4-979-274-2□
Singapore model	4-979-274-3□
Hong Kong model	4-979-274-4□
Tourist model	4-979-274-5□
Indonesian model	4-979-274-6□
Thailand model	4-979-274-7□

CAUTION
Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

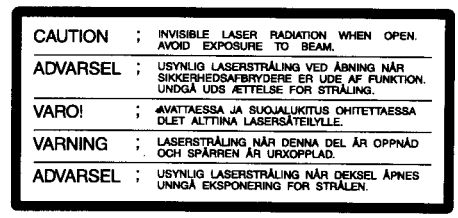
Notes on chip component replacement
- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

Flexible Circuit Board Repairing
- Keep the temperature of soldering iron around 270°C during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering.

Laser component in this product is capable of emitting radiation exceeding the limit for Class 1.



This appliance is classified as a CLASS 1 LASER product. The CLASS 1 LASER PRODUCT MARKING is located on the rear exterior.


CAUTION ; INVISIBLE LASER RADIATION WHEN OPEN. AVOID EXPOSURE TO BEAM.
ADVARSEL ; USYNLIG LASERSTRÅLING VED ÅBNING NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION. UNDGÅ UDS ÆTTELSE FOR STRÅLING.
VARO! ; AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTTIINA LASERSÄTEILYLLE.
VARNING ; LASERSTRÅLING NÄR DENNA DEL ÄR OPPNÅD OCH SPÄRREN ÄR URXOPPLAD.
ADVARSEL ; USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES UNNGÅ EKSPONERING FOR STRÅLEN.

This caution label is located inside the unit.

SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

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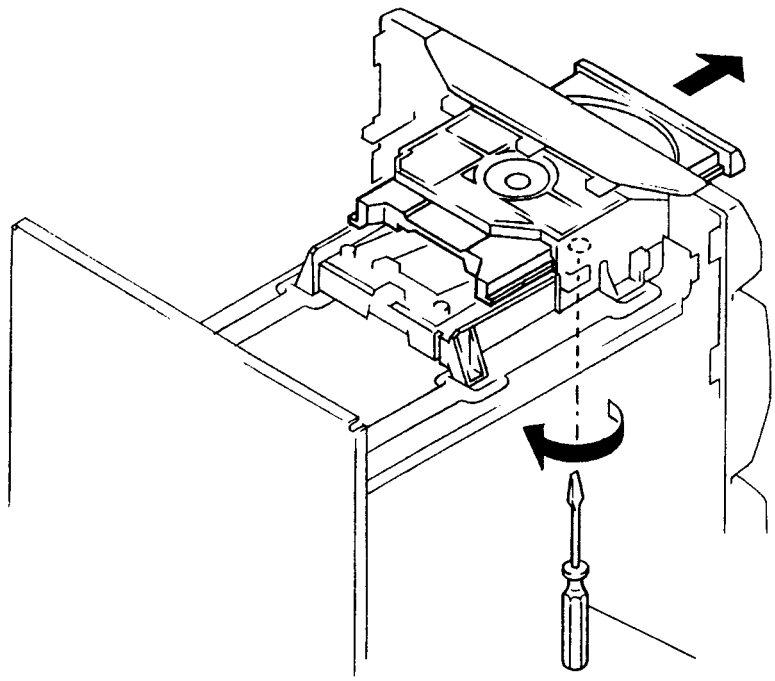
- Abbreviation
  - G: German model.
  - IT: Italian model.
  - EE: East European model.
  - EA: Saudi Arabia model.
  - SP: Singapore model.
  - MY: Malaysia model.
  - TW: Taiwan model.
  - HK: Hong Kong model.
  - IA: Indonesian model.
  - TH: Thailand model.
  - JE: Tourist model.

SECTION 1
SERVICING NOTE

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic break-down because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.
During repair, pay attention to electrostatic break-down and also use the procedure in the printed matter which is included in the repair parts.
The flexible board is easily damaged and should be handled with care.

HOW TO OPEN THE DISC TRAY WHEN POWER SWITCH TURNS OFF



Insert a tapering driver into the aperture of the unit bottom, and turn in the direction of arrow.
** To close the disc tray, turn the driver in the reverse direction.*

NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe from more than 30 cm away from the objective lens.

[Switching the channel step 9 KHz/10 KHz]

Press [ENTER/NEXT] button and [POWER] button simultaneously to switch the AM channel step 9 KHz and 10 KHz. Be sure not to change with carelessness.

[FL Display Tube, LED All Lit and Key Check mode]

When the [TUNER/BAND], [DISPLAY/DEMO], and [MENU 2] buttons are pressed simultaneously, the FL display tube and LEDs will all light up. Press any button to enter the key check mode.
When the key check mode is entered, the FL display tube displays "K 1 J0 V0". Each time a button is pressed, the counter increases in the following order, K 2 → K 3 → K 4.
If buttons already pressed once are pressed again, the counter will not increase. When the [VOLUME] knob is rotated in the + direction, the count increases in the following order.
V1 → V2 → V3.
When rotated in the–direction, it decreases in the following order.
V0 → V9 → V8.

When the AMS dial is rotated in the clockwise direction, the count increases in the following order.
J1 → J2 → J3.
When rotated in the counterclockwise direction, it decreases in the following order.
J0 → J9 → J8.
To exit form the test mode, press the [TUNER/BAND], [DISPLAY/DEMO], [MENU 2] buttons simultaneously again.

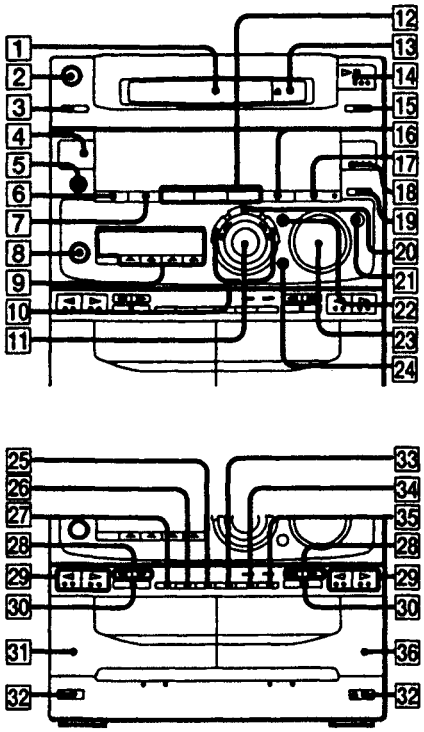
SECTION 2
GENERAL

This section is extracted from instruction manual.

Index to Parts and Controls

Refer to the pages indicated in parentheses for details on how to use the controls. Controls with an asterisk have indicators on themselves.

Front Panel

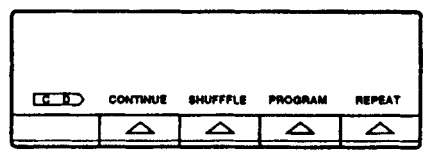


1 Disc tray (7)
2 POWER switch (7)
3 LOOP button (10)
4 TIMER button (19)
5 PHONES jack (17)
6 DISPLAY/DEMO button (6)
7 SURROUND button (18)
8 MIX MIC jack (21)
9 MULTI FUNCTION CONTROL buttons (26)
10 FREQUENCY +/– buttons (18)
11 JOG dial (7)
12 MENU 1 – 3 button (17)
13 ⏏ OPEN/CLOSE button (7)
14 ▷II (play /pause) button* (7)
15 ■ (stop) button (7)
16 P FILE button (18)
17 EFFECT ON/OFF button* (17)
18 TUNER/BAND button* (10)
19 FUNCTION button (8)
20 ENTER/NEXT button (8)
21 GROOVE button (17)
22 DBFB button (17)
23 VOLUME control (17)
24 KARAOKE PON/MPX button (21)
25 HIGH SPEED DUBBING button (16)
26 DIRECTION button (12)
27 DOLBY NR button (12)
28 ◀◀/▶▶ (rewind/fast forward) button (12)
29 ◁/▷ (reverse side play/ front side play) button* (12)
30 ■ (stop) button (12)
31 Deck A (12)
32 ⏏ EJECT button (12)
33 CD SYNCHRO button (13)
34 ● REC button* (13)
35 II PAUSE button* (12)
36 Deck B (12)

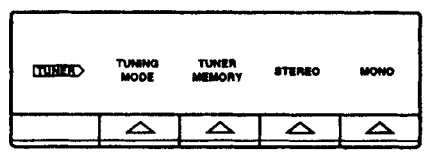
MULTI FUNCTION CONTROL buttons

The buttons you can operate the CD player, tuner and the timer light up.

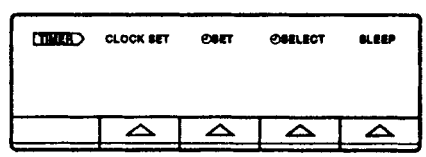
CD player



Tuner

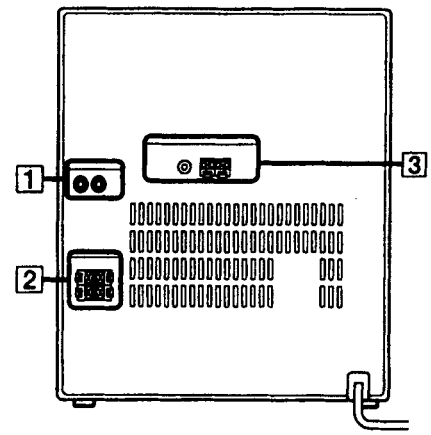


Timer



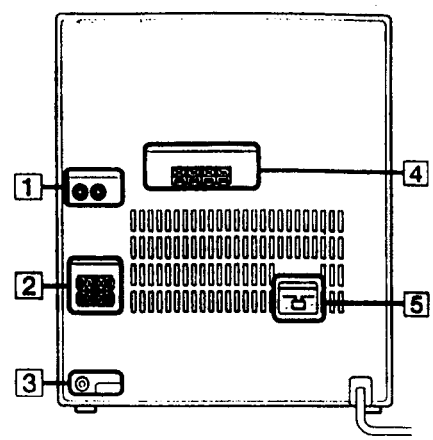
Rear panel

(AEP, UK, German, Italian, East European models)



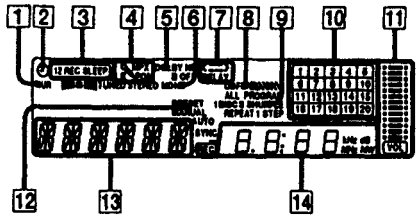
1 VIDEO IN jacks (22)
2 SPEAKER L/R connectors (4)
3 ANTENNA terminals (4)

(E, Saudi Arabia, Hong Kong, Malaysia, Singapore, Taiwan, Tourist, Thailand, Indonesian models)



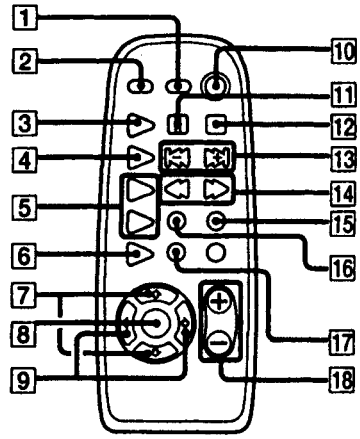
1 VIDEO IN jacks (22)
2 SPEAKER L/R connectors (4)
3 SUPER WOOFER jack (22)
4 ANTENNA terminals (4)
5 Voltage selector (Except Malaysia, Thailand models) (5)

Display Window



1 SUR indicators (18)
2 ⏲ indicator (19)
3 Timer indicators (19)
4 Karaoke PON/MPX indicators (21)
5 DOLBY NR indicator (12)
6 Tuning indicator (10)
7 Direction mode indicators (12)
8 DBFB indicator (17)
9 CD playback indicators (7)
10 Music calendar (7)
11 VOLUME indicators
12 Tuner indicators (10)
13 Multi display
14 Radio frequency/playing time/sound frequency level indications

Remote



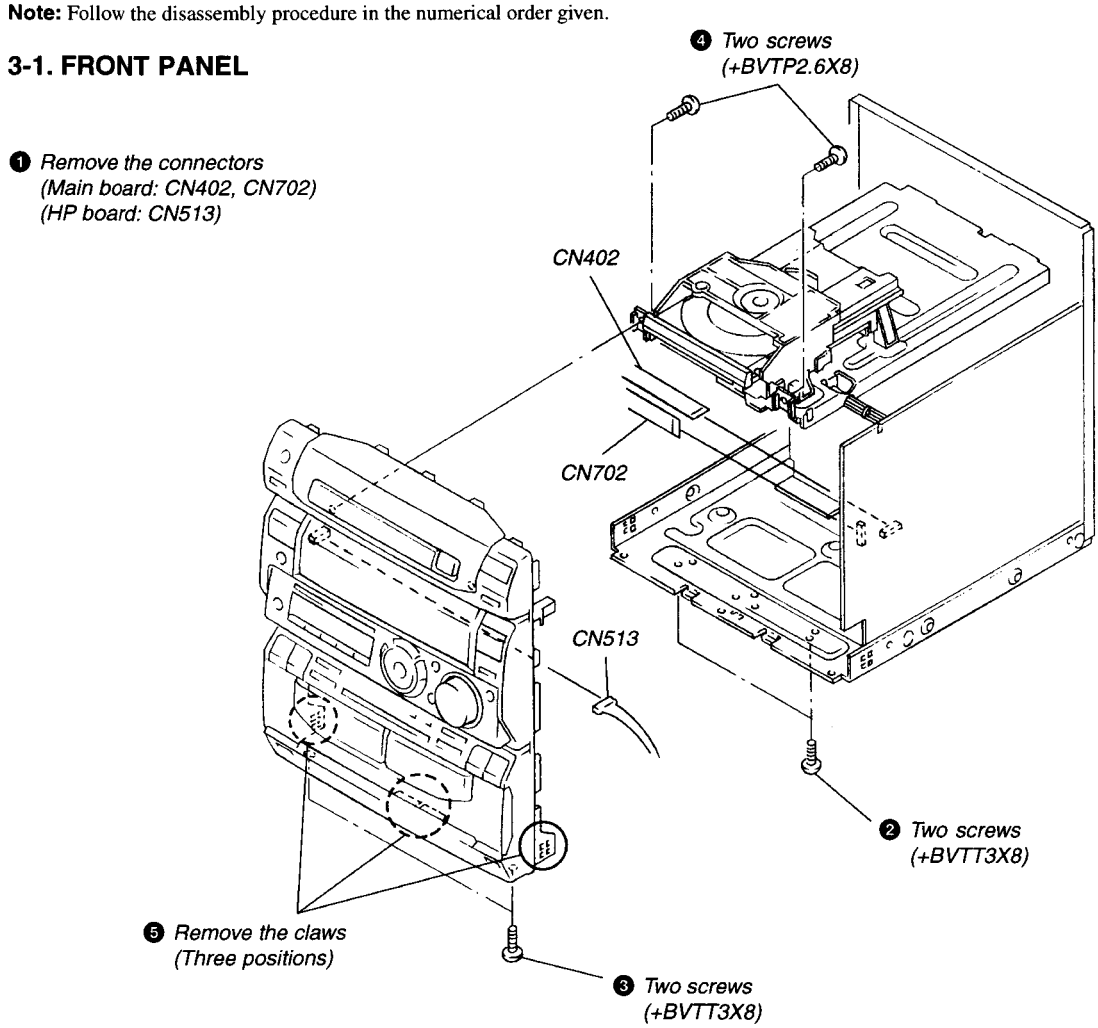
1 SLEEP button (19)
2 LOOP button (9)
3 CD ▷ button (7)
4 TUNER/BAND button (10)
5 DECK A ▷ /DECK B ▷ button (12)
6 FUNCTION button (8)
7 ◁◁ / ▷▷ buttons (17, 18)
8 MUSIC MENU ON/OFF buttons (17)
9 ∧ / ∨ buttons (17, 18)
10 POWER switch (7)
11 ⏸ (pause) button (7)
12 ■ (stop) button (7)
13 ⏮ / ⏭ AMS* buttons (7)
14 ◁ / ▷ (rewind/fast forward) buttons (7)
15 EDIT button (13)
16 CHECK button (8)
17 CLEAR button (8)
18 VOL (+/–) button (17)

* AMS=Auto Music Sensor

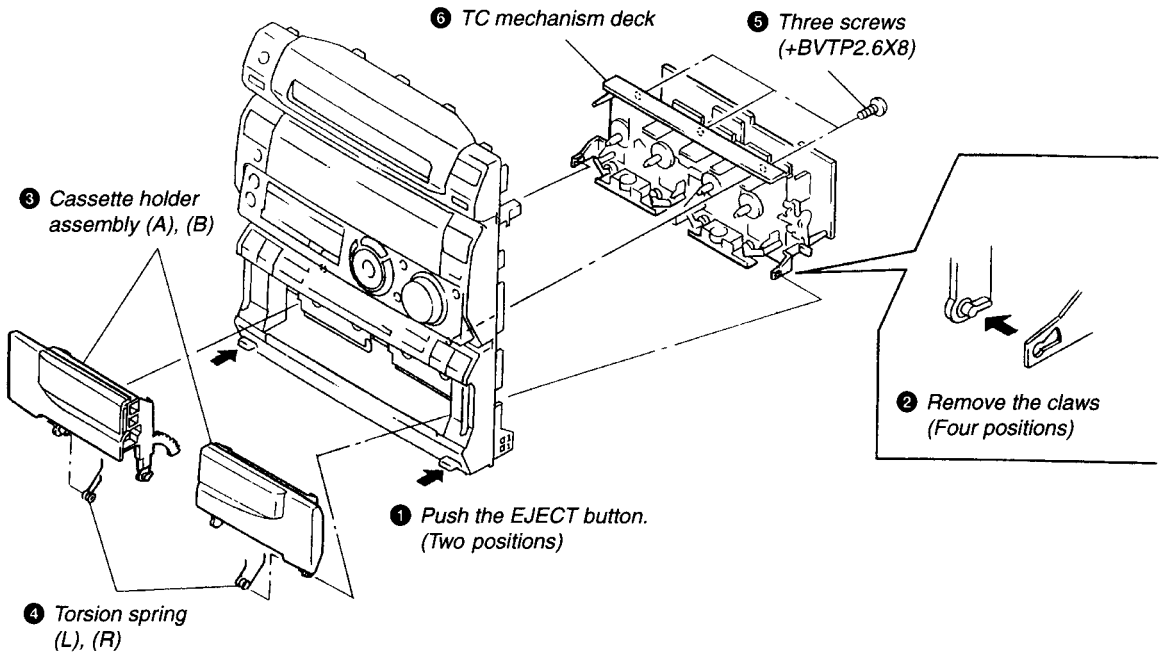
SECTION 3
DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

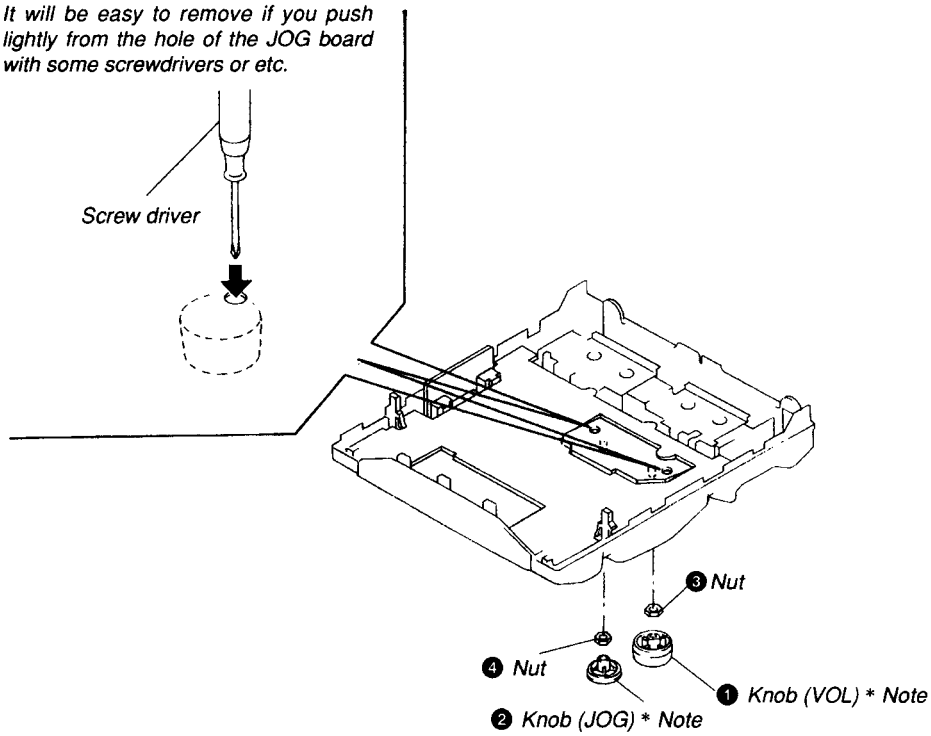
3-1. FRONT PANEL

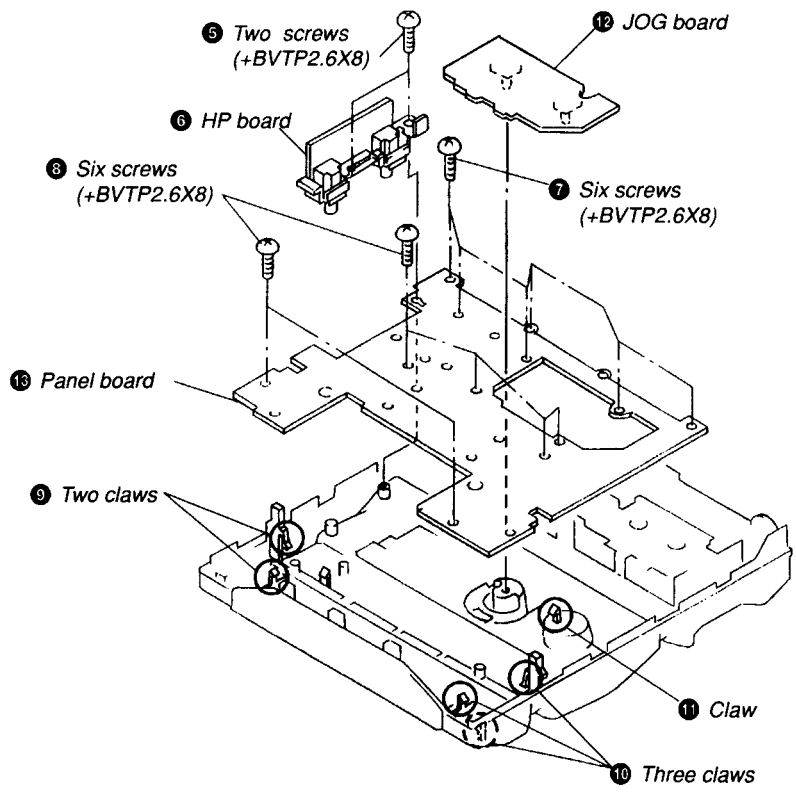


3-2. TC MECHANISM DECK

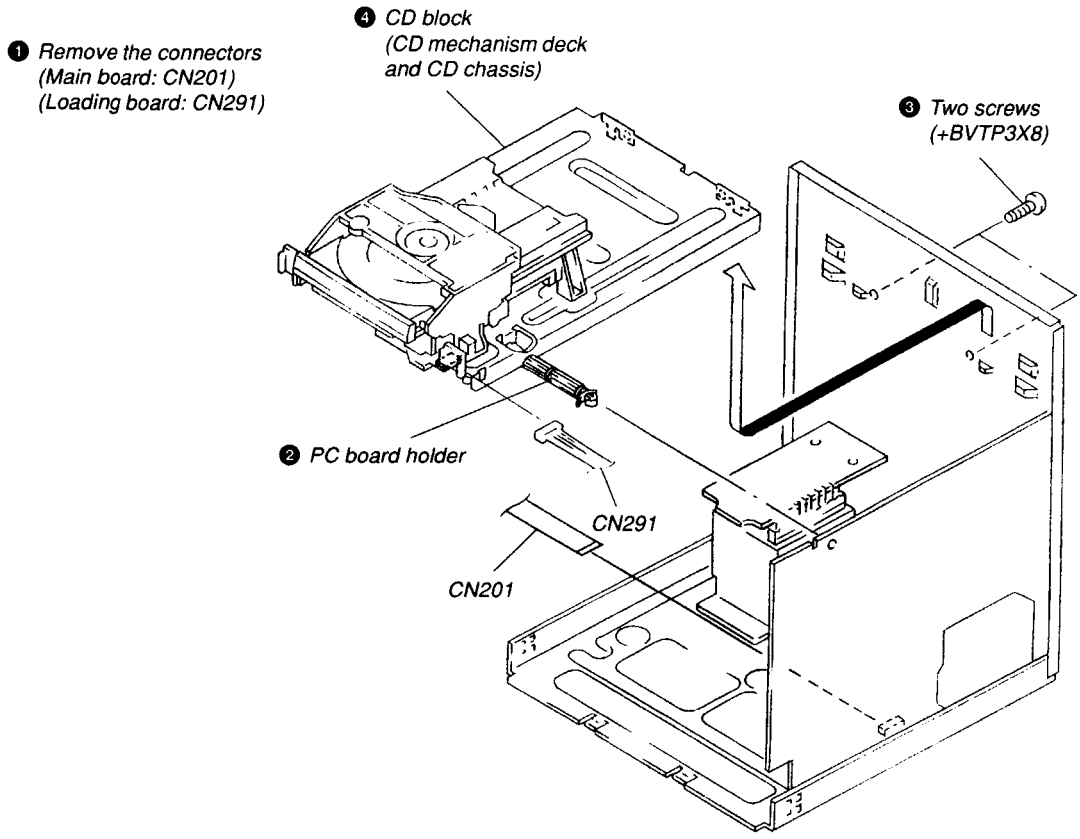


3-3. HP BOARD, JOG BOARD AND PANEL BOARD

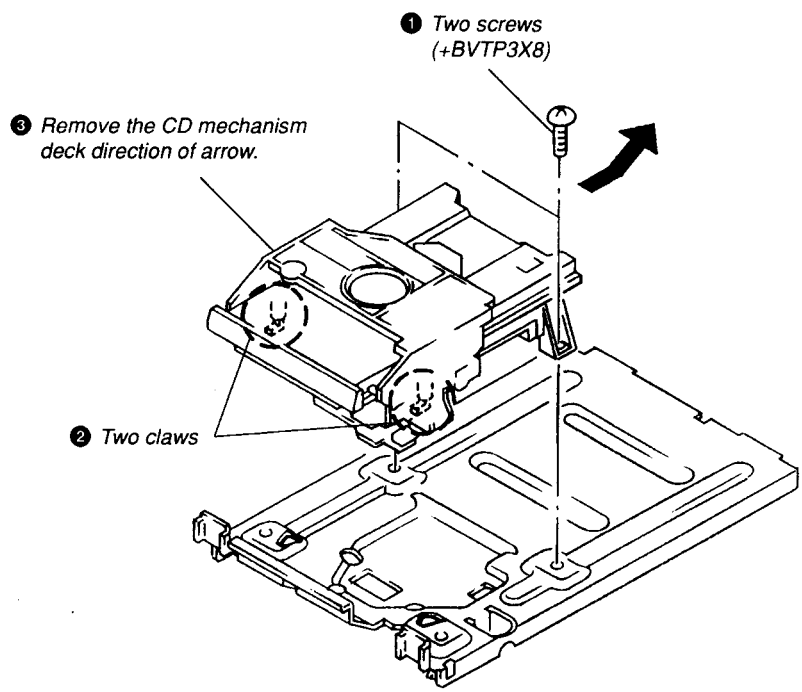

*Note: It will be easy to remove if you push lightly from the hole of the JOG board with some screwdrivers or etc.
Screw driver
❸ Nut
❹ Nut
❶ Knob (VOL) * Note
❷ Knob (JOG) * Note



3-4. CD BLOCK



3-5. CD MECHANISM DECK



SECTION 4
MECHANICAL ADJUSTMENTS

Precaution

1. Clean the following parts with a denatured alcohol-moistened swab:
   record/playback heads — pinch rollers
   erase head — rubber belts
   capstan — idlers
2. Demagnetize the record/playback head with a head demagnetizer.
3. Do not use a magnetized screwdriver for the adjustments.
4. After the adjustments, apply suitable locking compound to the parts adjusted.
5. The adjustments should be performed with the rated power supply voltage unless otherwise noted.

Torque Measurement

Torque	Torque meter	Meter reading
FWD	CQ-102C	36 to 61 g • cm (0.5 - 0.84 oz • inch)
FWD back tension	CQ-102C	2 to 6 g • cm (0.02 - 0.08 oz • inch)
REV	CQ-102RC	36 to 61 g • cm (0.5 - 0.84 oz • inch)
REV back tension	CQ-102RC	2 to 6 g • cm (0.02 - 0.08 oz • inch)
FF/REW	CQ-201B	61 to 143 g • cm (0.85 - 1.99 oz • inch)
FWD tension	CQ-403A	100 g or more (3.53 oz or more)
REV tension	CQ-403R	100 g or more (3.53 oz or more)

SECTION 5
ELECTRICAL ADJUSTMENTS

DECK SECTION **0 dB=0.775V**

1. Demagnetize the record/playback head with a head damagnetizer.
2. Do not use a magnetized screwdriver for the adjustments.
3. After the adjustments, apply suitable locking compound to the parts adjusted.
4. The adjustments should be performed with the rated power supply voltage unless otherwise noted.
5. The adjustments should be performed in the order given in this service manual. (As a general rule, playback circuit adjustment should be completed before performing recording circuit adjustment.)
6. The adjustments should be performed for both L-CH and R-CH.
7. Switches and controls should be set as follows unless otherwise specified.
   DOLBY NR switch: OFF

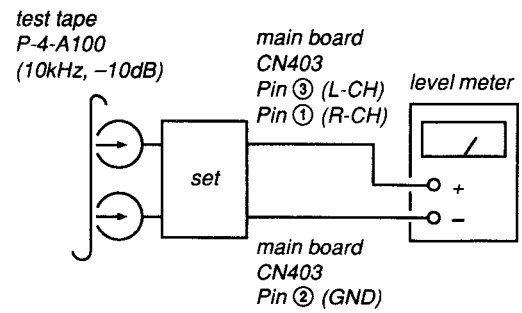
Tape	Signal	Used for
P-4-A100	10 kHz, –10 dB	Azimuth Adjustment
WS-48B	3 kHz, 0 dB	Tape Speed Adjustment
P-4-L300	315 Hz, 0 dB	Level Adjustment

Record/Playback Head Azimuth Adjustment (Deck A, Deck B)

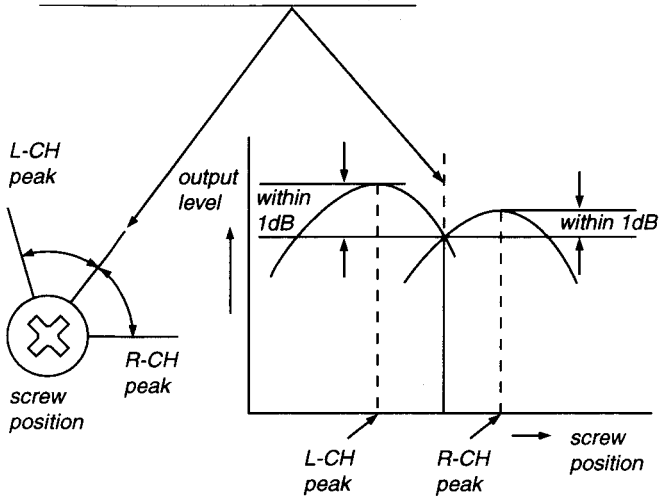
Note: Perform this adjustments for both decks.

Procedure:

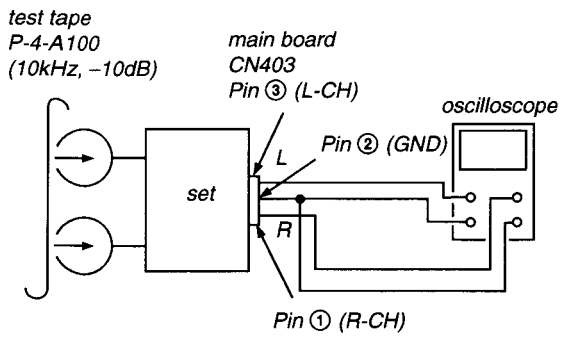
1. Mode : Playback

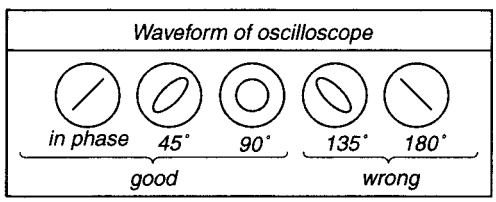


2. Turn the adjustment screw and check output peaks. If the peaks do not match for L-CH and R-CH, turn the adjustment screw so that outputs match within 1 dB of peak.



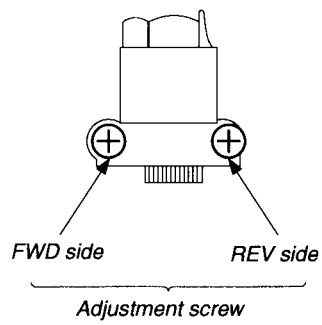
3. Mode: Playback





4. After the adjustments, apply suitable locking compound to the parts adjusted.

Adjustment Location: Playback Head (Deck A)
Record/Playback/Erase Head (Deck B)

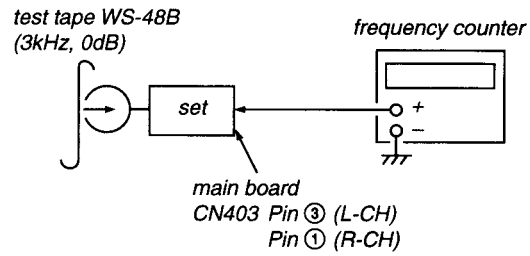


Tape Speed Adjustment (Deck A)

Note: Start the Tape Speed adjustment as below after setting the test mode.
The tape speed can be changed with the [HIGH SPEED DUBBING] button during the test mode.

Method :
1. Turn the power switch on.
2. Press the [DISPLAY/DEMO] button, [MENU 1] button and [TUNER/BAND] button simultaneously.

Procedure :
Mode: Playback



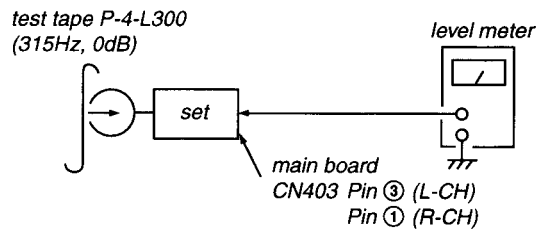
1. Insert the WS-48B into the deck A to playback.
2. Press the [HIGH SPEED DUBBING] button. Then at HIGH SPEED mode.
3. Adjust the RV652 on the MD board so that the frequency counter reading becomes 6,000 ± 30 Hz.
4. Press the [HIGH SPEED DUBBING] button again to be set the NORMAL SPEED mode.
5. Set to the playback mode.
6. Adjust the RV651 on the MD board so that the frequency counter reading becomes 3,000 ± 15 Hz.

Frequency difference between deck A and deck B the beginning of the tape should be within ± 1.5%.

Adjustment Location: MD board

Playback Level Adjustment (Deck A, Deck B)

Procedure:
Mode: Playback



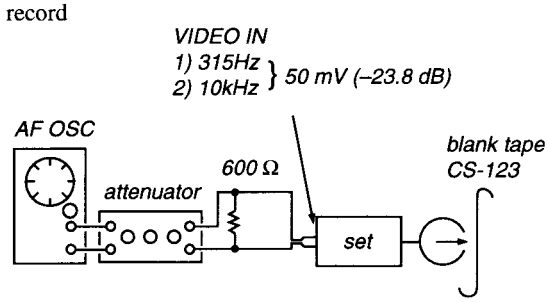
Deck A is RV311 (L-CH) and RV411 (R-CH), deck B is RV301 (L-CH) and RV401 (R-CH)
so that adjustment within the following adjustment level.

Adjustment level:
CN403 playback level: 301.5 to 338.3 mV (–8.2 to –7.2 dB)
level difference between the channels: within ± 0.5 dB
Adjustment Location: MD board

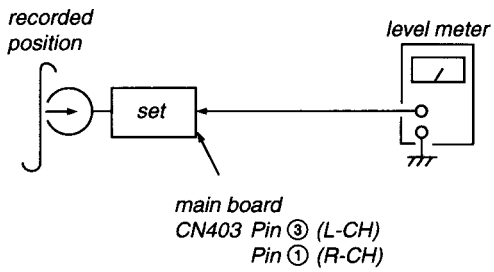
Record Bias Adjustment (Deck B)

Procedure:

1. Press [FUNCTION] button to Select VIDEO.
2. Mode: record



3. Mode: Playback



4. Confirm playback the signal recorded in step 2 become adjustment level as follows.
   If these levels do not adjustment level, adjust the RV341 (L-CH) and RV441 (R-CH) on the MD board to repeat steps 2 and 3.

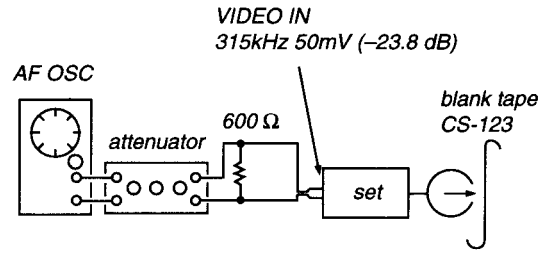
Adjustment level: The playback output of 10 kHz level difference against 315 Hz reference should be ± 0.5 dB.

Adjustment Location: MD board

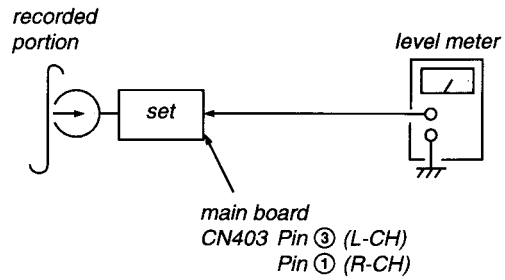
Record Level Adjustment (Deck B)

Procedure:

1. Press [FUNCTION] button to Select VIDEO.
2. Mode: record



3. Mode: Playback



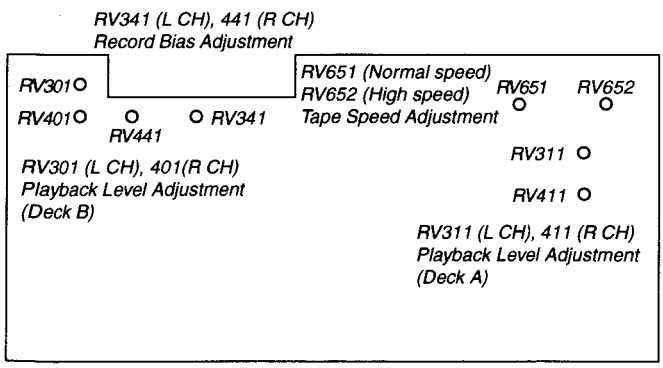
4. Confirm playback the signal recorded in step 2 become adjustment level as follows.
   If these levels do not adjustment level, adjust the RV301 (L-CH) and RV351 (R-CH) on the main board to repeat steps 2 and 3.

Adjustment level:
CN403 PB level: 47.3 to 53.1 mV (–24.3 to –23.3 dB)

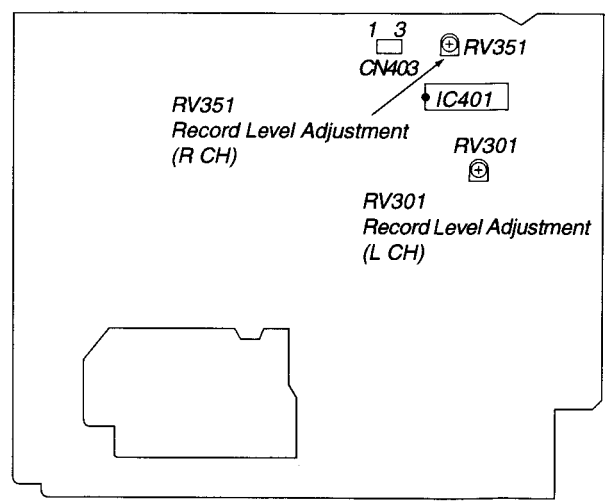
Adjustment Location: MAIN board

Adjustment Location:

[MD BOARD] (Conductor Side)



[MAIN BOARD] (Component Side)



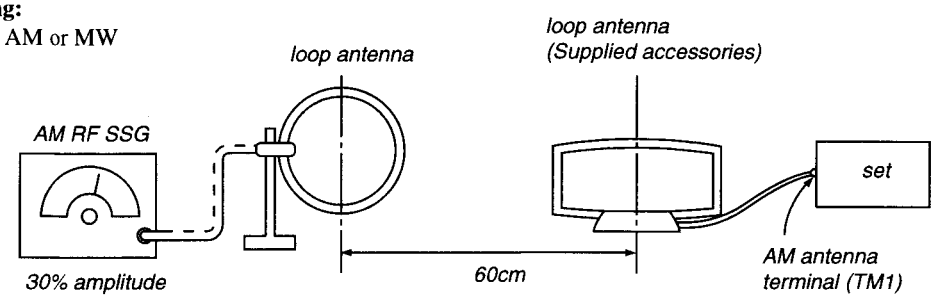
TUNER SECTION | 0dB=1μV

Note: As a front-end (FE1) is difficult to repair if faulty, replace it with new one.

AM Tuned Level Adjustment

Note: FM Tuned Level adjustment should be performed after this AM Tuned Level Adjustment.

Setting:
Band: AM or MW



Field strength dB (μV/m) = SSG output level dB (μV/m) –26dB.

Modulation: 999 kHz (at 9 kHz step)
1,050 kHz (at 10 kHz step)

Procedure:

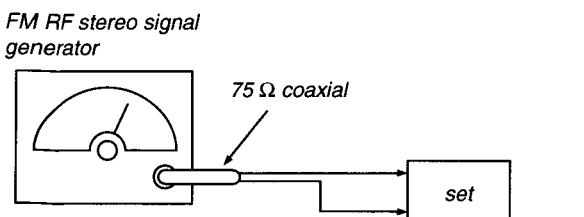
1. Set the output of SSG so that the input level of the set becomes 55 dB.
2. Tune the set to 999 kHz or 1,050 kHz.
3. Adjust RV41 (EXCEPT Thailand model), RV42 (Thailand model) to the point (moment) when the TUNED indicator will change from going off to going on.

Adjustment Location: TCB board

FM Tuned Level Adjustment

Note: This adjustment should be after AM Tuned Level Adjustment.

Setting:
Band: FM



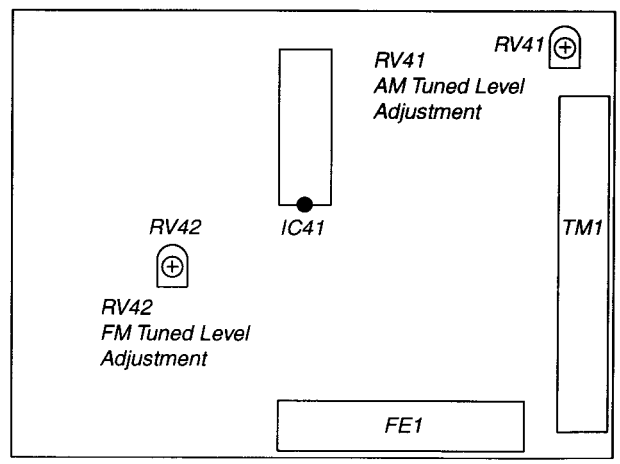
Carrier frequency: 98MHz
Modulation: AUDIO 1kHz, 75kHz deviation (100%)
Output level: 25dB (at 75Ω open)

Procedure:

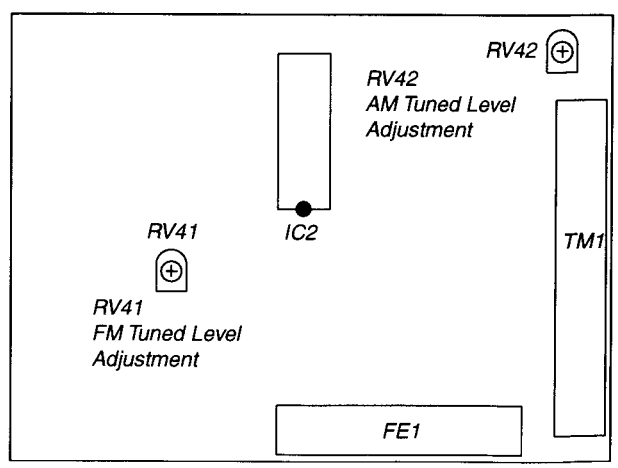
1. Supply a 25 dB 98 MHz signal from the ANTENNA terminal.
2. Tune the set to 98 MHz.
3. Adjust RV42 (EXCEPT Thailand model), RV41 (Thailand model) to the point (moment) when the TUNED indicator will change from going off to going on.

Adjustment Location: TCB board

Adjustment Location:
EXCEPT Thailand model
[TCB BOARD] (Component Side)



Thailand model
[TCB BOARD] (Component Side)



SW OSC Voltage Adjustment (E, EA, MY, SP, HK, TW, IA model)

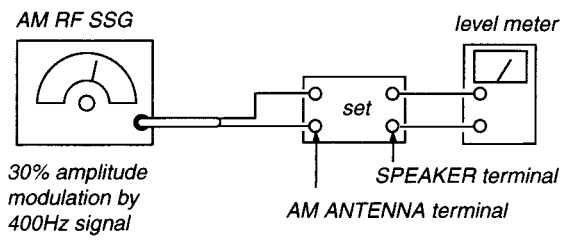
Setting:
Band: SW

Procedure:
1. Connect digital Voltmeter to diode D1 center lead and ground.
2. Adjust for a following value reading on digital voltmeter.

	Set frequency	Adjustment part	Reading on digital voltmeter
SW	5.95 MHz	T2	1.2 ± 0.1 V
	17.9 MHz	CV2	8.5 ± 0.2 V

SW Tracking Adjustment (E, EA, MY, SP, HK, TW, IA model)

Setting:
Band: SW



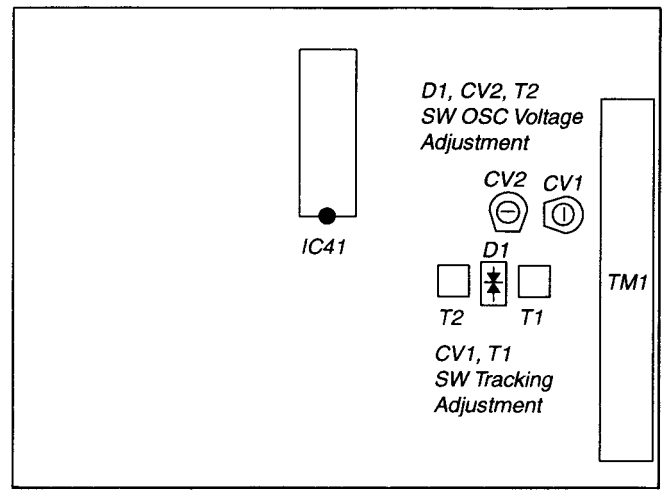
Procedure:
Adjust for maximum reading on level meter.

	Set frequency	Adjustment part
SW	7 MHz	T1
	17 MHz	CV1

- Repeat the procedures is each adjustment several times, and the frequency coverage and tracking adjustment should be finally done by the trimmer capacitors.

Adjustment Location:

[TCB BOARD] — Component Side —



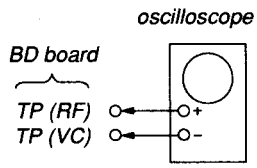
- Abbreviation
  EA: Saudi Arabia model.
  MY: Malaysia model.
  SP: Singapore model.
  HK: Hong Kong model.
  TW: Taiwan model.
  IA: Indonesian model.

CD SECTION

Note:

1. CD Block is basically designed to operate without adjustment. Therefore, check each item in order given.
2. Use YEDS-18 disc (3-702-101-01) unless otherwise indicated.
3. Use an oscilloscope with more than 10MΩ impedance.
4. Clean the object lens by an applicator with neutral detergent when the signal level is low than specified value with the following checks.
5. Adjust the focus bias adjustment when optical block is replaced.

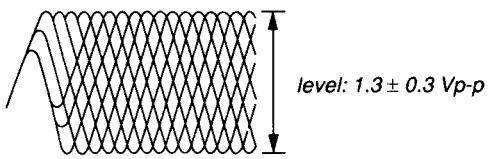
Focus Bias Adjustment



Procedure:

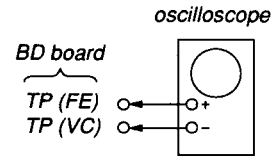
1. Connect oscilloscope to test point TP (RF). (Ground terminal : TP (VC))
2. Turned Power switch on.
3. Put disc (YEDS-18) in and playback.
4. Adjust RV101 so that the waveform is clear. (Clear RF signal waveform means that the shape "◊" can be clearly distinguished at the center of the waveform.)
5. After adjustment, check the RF signal level.

• RF signal
VOLT/DIV: 200 mV
TIME/DIV: 500 nS



S Curve Check

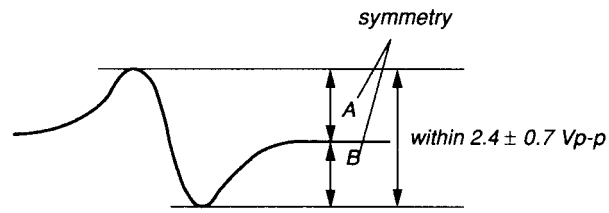
Procedure :



1. Connect oscilloscope to test point TP (FEO).
2. Connect between test point TP (FOK) and Ground by lead wire.
3. Turn Power switch on.
4. Put disc (YEDS-18) in and turned Power switch on again and actuate the focus search. (actuate the focus search when disc table is moving in and out.)
5. Check the oscilloscope waveform (S-curve) is symmetrical between A and B. And confirm peak to peak level within 2.4 ± 0.7 Vp-p.

S-curve waveform

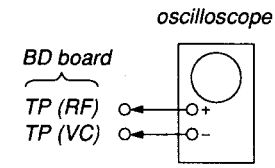
6. After check, remove the lead wire connected in step 2.



Note: • Try to measure several times to make sure than the ratio of A : B or B : A is more than 10 : 7.
• Take sweep time as long as possible and light up the brightness to obtain best waveform.

RF Level Check

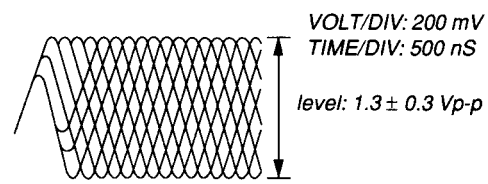
Procedure :



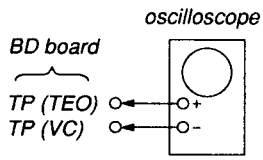
1. Connect oscilloscope to test point TP (RF) on BD board.
2. Turned Power switch on.
3. Put disc (YEDS-18) in and playback.
4. Confirm that oscilloscope waveform is clear and check RF signal level is correct or not.

Note: Clear RF signal waveform means that the shape "◊" can be clearly distinguished at the center of the waveform.

RF signal waveform

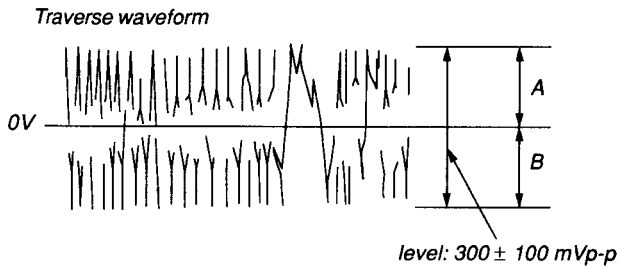


E-F Balance Check



Procedure:

1. Connect test point TP701 (ADJ) on Main board to Ground with a lead wire.
2. Connect oscilloscpe to test point TP (TEO).
3. Turned Power switch on.
4. Put disc (YEDS-18) in and playback.
5. Confirm that the oscilloscope waveform is symmetrical on the top and bottom in relation to 0Vdc, and check this level.



Specified level: • $\frac{A-B}{2(A+B)} \times 100$ = less than ± 7%

• A + B = 300 ± 100 mVp-p

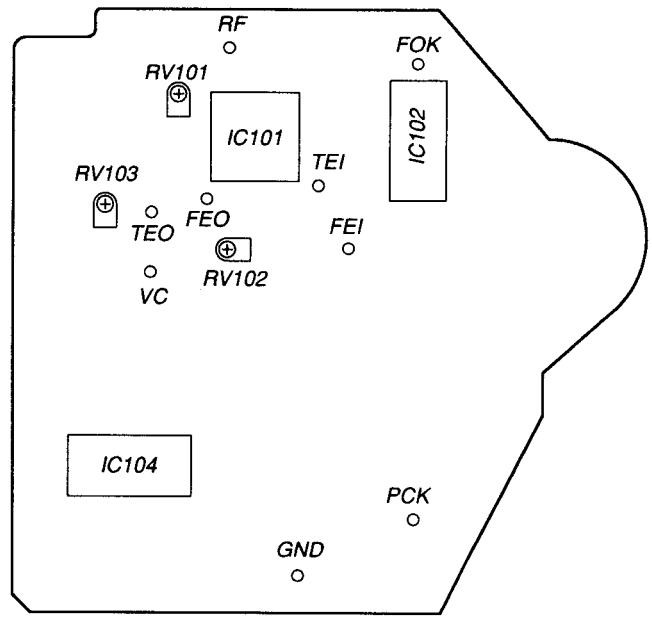
6. Remove the lead wire connected in step 1.

Focus/Tracking Gain Adjustment (RV102, RV103)

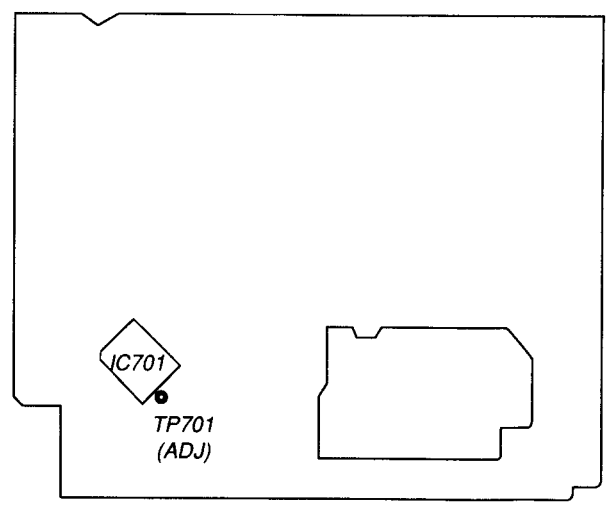
This gain has a margin, so even if it is slightly off.
There is no problem.
Therfore, do not perform this adjustment.
Please note that it should be fixed to mechanical center position when you moved and do not know original position.

Adjustment Location:

[BD BOARD] — Component Side —

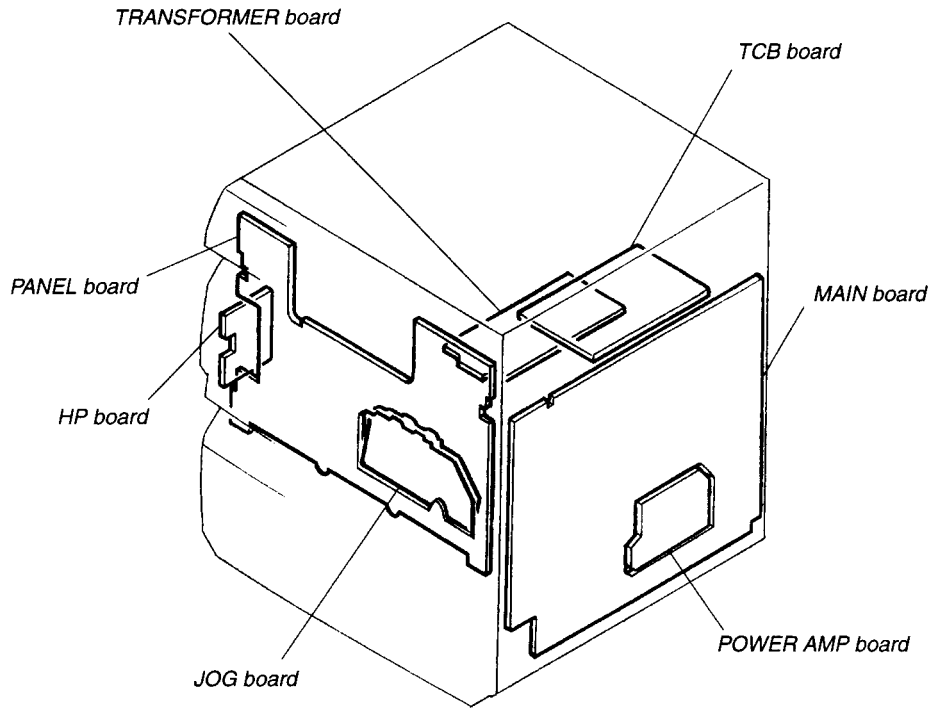


[MAIN BOARD] — Conductor Side —

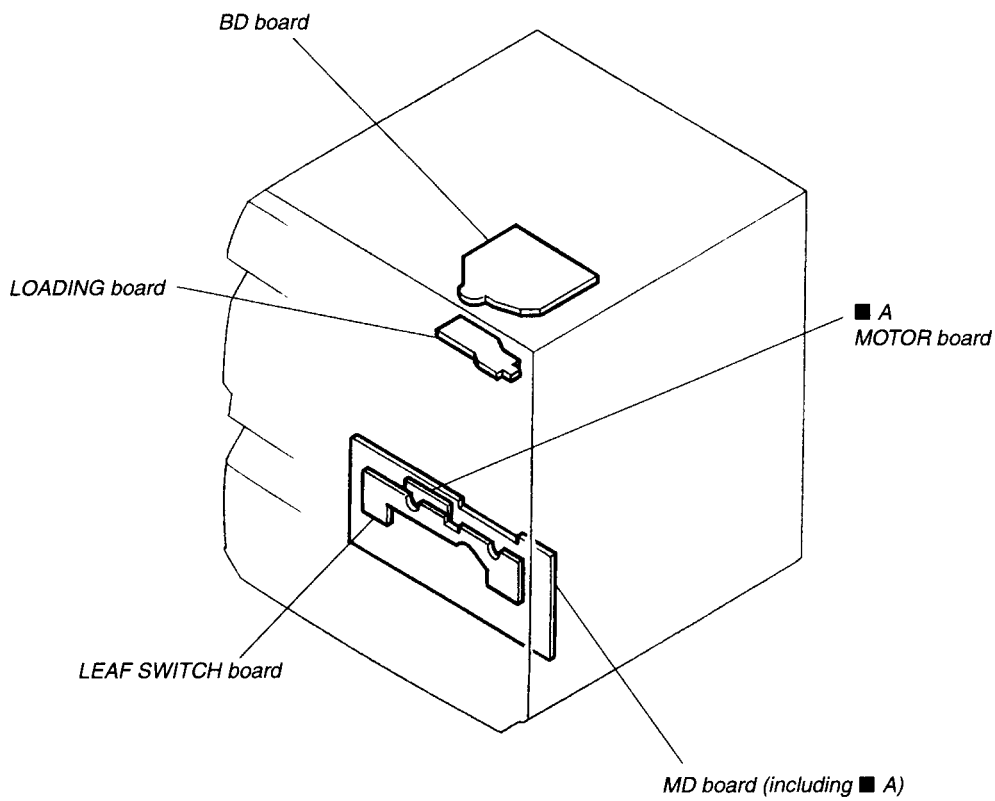


SECTION 6
DIAGRAMS

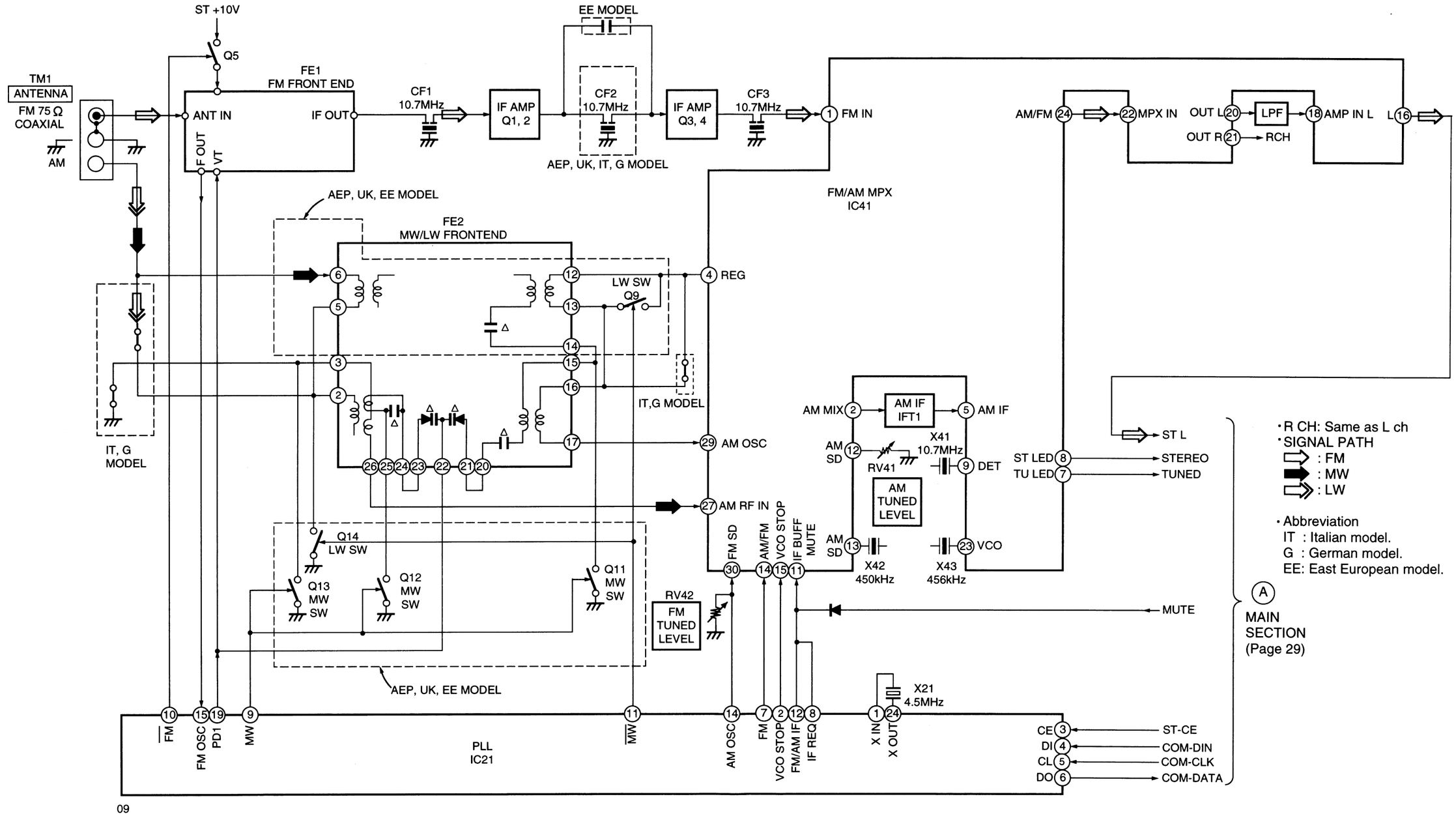
6-1. CIRCUIT BOARDS LOCATION



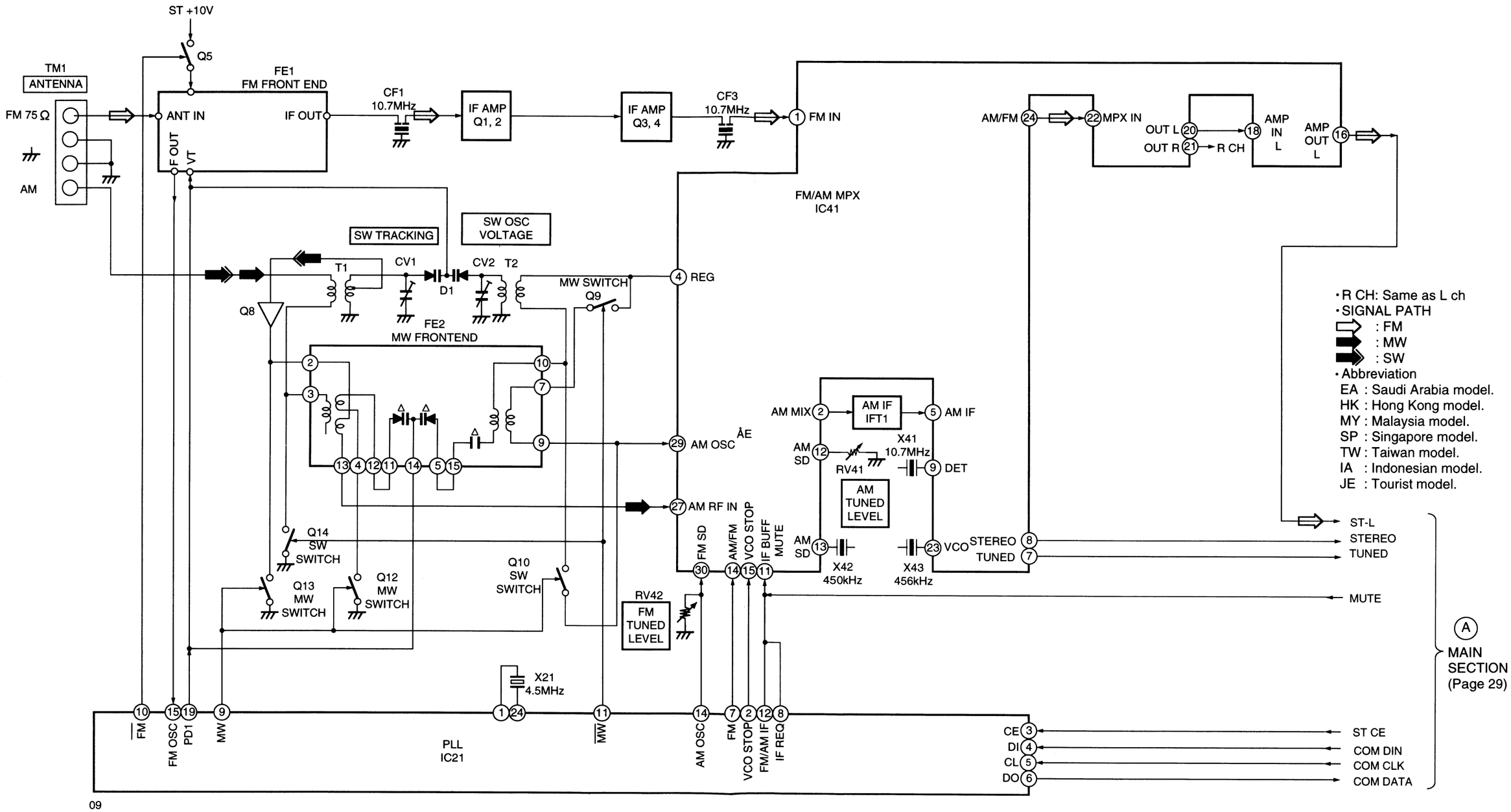
Note: ■A is including in MD board.



6-2. BLOCK DIAGRAMS
— TUNER SECTION — (AEP, UK, G, IT, EE MODEL)

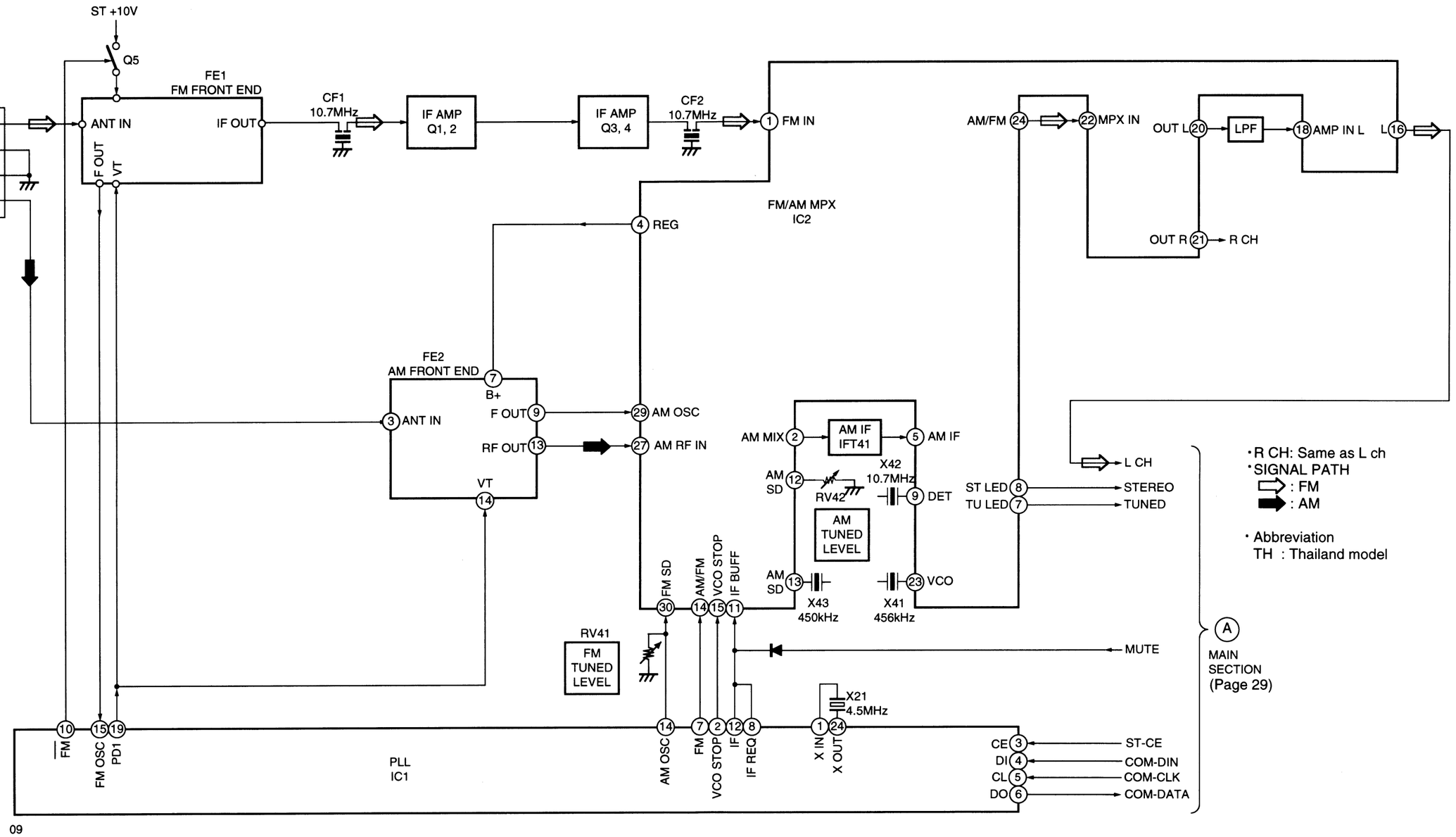


— TUNER SECTION — (E, EA, SP, MY, TW, HK, IA, JE MODEL)

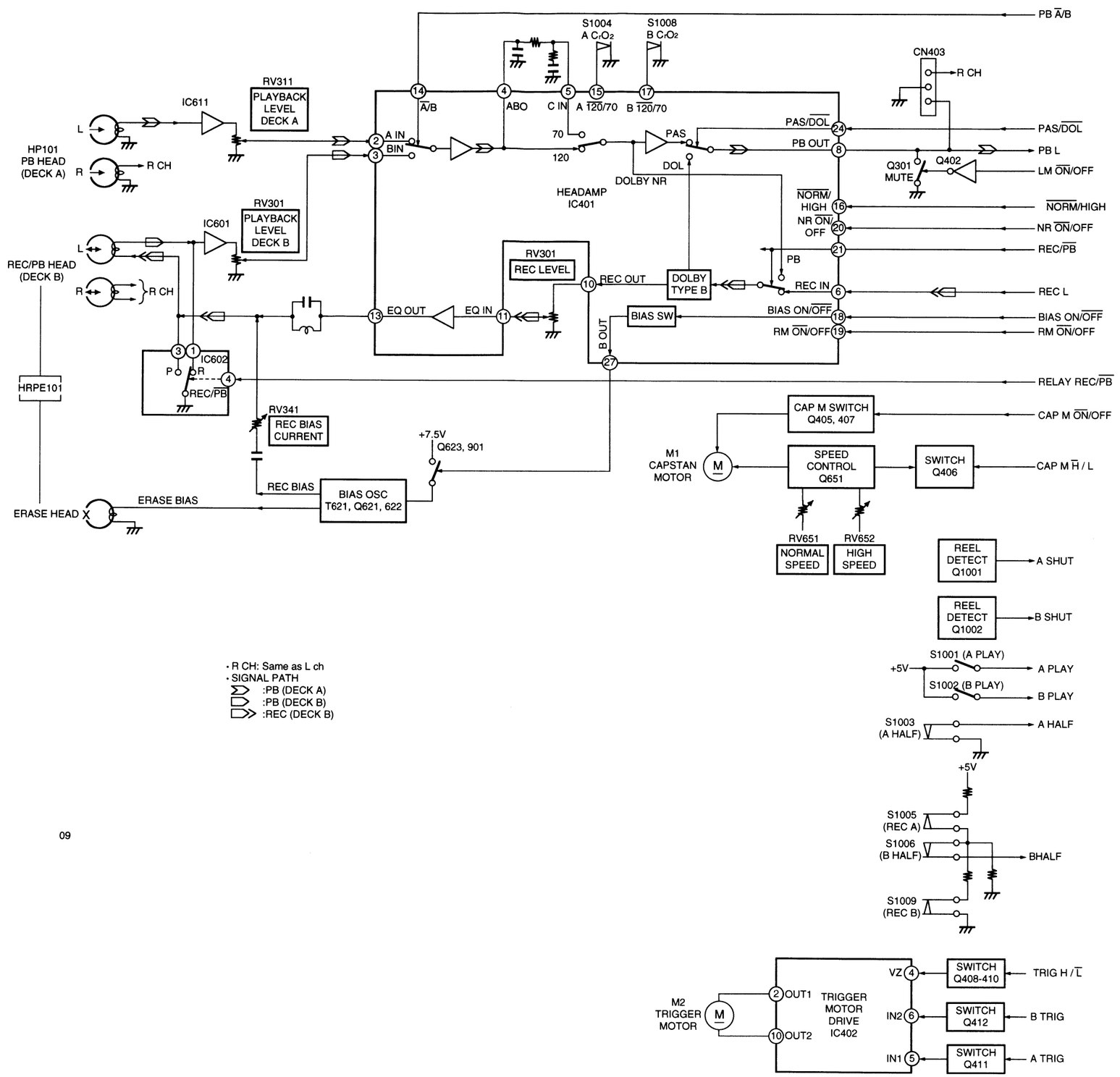


09

— TUNER SECTION — (TH MODEL)



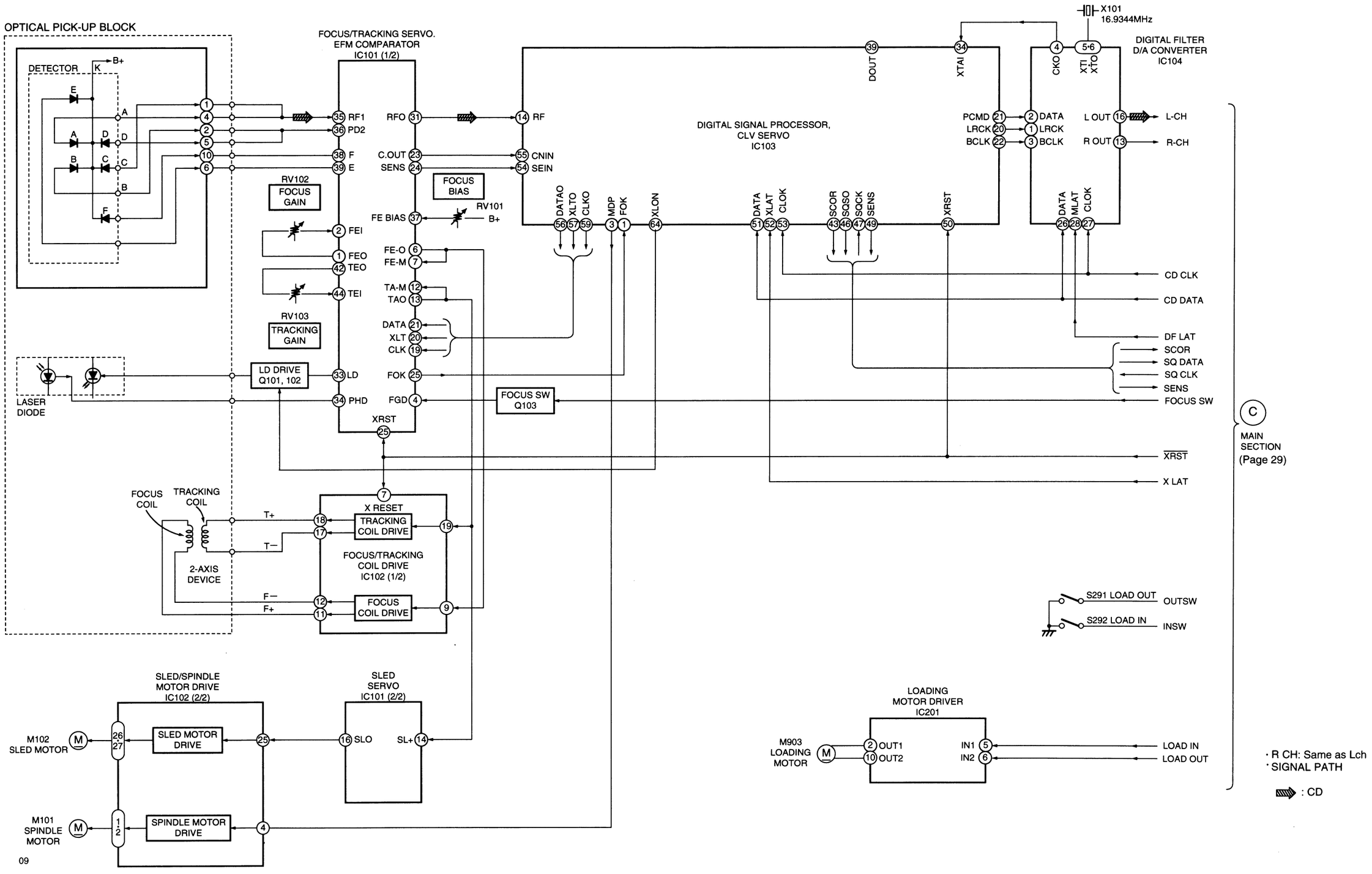
— DECK SECTION —



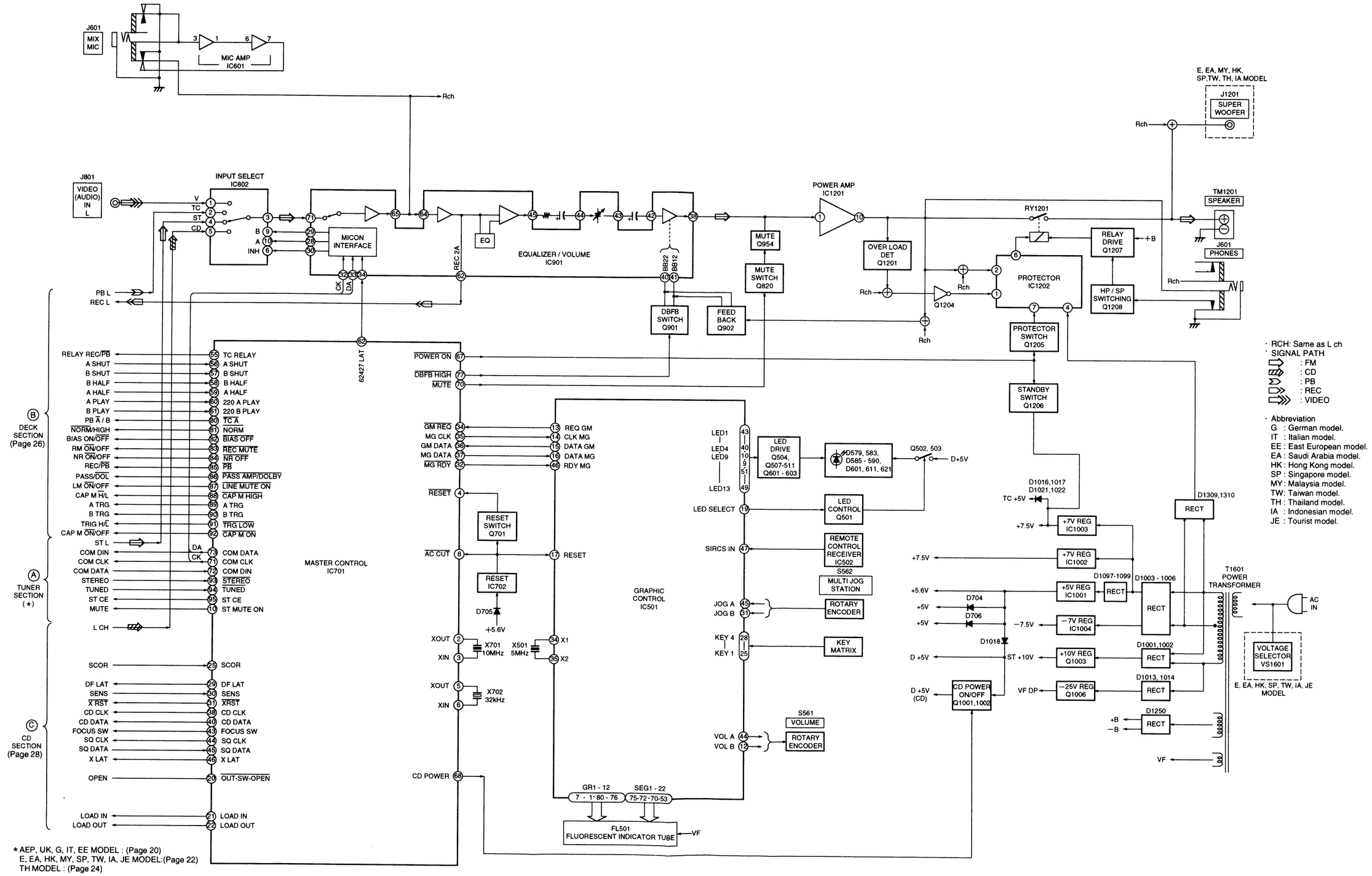
- R CH: Same as L ch
- SIGNAL PATH
  - :PB (DECK A)
  - :PB (DECK B)
  - :REC (DECK B)

09

— CD SECTION —


OPTICAL PICK-UP BLOCK
DETECTOR
K
B+
E
A
D
B
C
F
FOCUS/TRACKING SERVO.
EFM COMPARATOR
IC101 (1/2)
RF1
PD2
F
E
RFO
C.OUT
SENS
RF
CNIN
SEIN
RV102
FOCUS
GAIN
FOCUS
BIAS
RV101
B+
FE BIAS
FEI
FEO
TEO
TEI
FE-O
FE-M
TA-M
TAO
RV103
TRACKING
GAIN
DATA
XLT
CLK
LD DRIVE
Q101, 102
LD
PHD
FOK
FGD
FOCUS SW
Q103
XRST
LASER
DIODE
FOCUS
COIL
TRACKING
COIL
T+
T−
2-AXIS
DEVICE
X RESET
TRACKING
COIL DRIVE
FOCUS/TRACKING
COIL DRIVE
IC102 (1/2)
F−
F+
FOCUS
COIL DRIVE
SLED/SPINDLE
MOTOR DRIVE
IC102 (2/2)
SLED
SERVO
IC101 (2/2)
M102
SLED MOTOR
SLED MOTOR
DRIVE
SLO
SL+
M101
SPINDLE
MOTOR
SPINDLE MOTOR
DRIVE
09
DOUT
XTAI
CKO
XTI
XTO
X101
16.9344MHz
DIGITAL FILTER
D/A CONVERTER
IC104
DIGITAL SIGNAL PROCESSOR,
CLV SERVO
IC103
DATAO
XLTO
CLKO
MDP
FOK
XLON
DATA
XLAT
CLOK
SCOR
SQSO
SQCK
SENS
XRST
PCMD
LRCK
BCLK
DATA
LRCK
BCLK
L OUT
R OUT
L-CH
R-CH
DATA
MLAT
CLOK
CD CLK
CD DATA
DF LAT
SCOR
SQ DATA
SQ CLK
SENS
FOCUS SW
XRST
X LAT
C
MAIN
SECTION
(Page 29)
S291 LOAD OUT
OUTSW
S292 LOAD IN
INSW
LOADING
MOTOR DRIVER
IC201
M903
LOADING
MOTOR
OUT1
OUT2
IN1
IN2
LOAD IN
LOAD OUT
· R CH: Same as Lch
· SIGNAL PATH
: CD

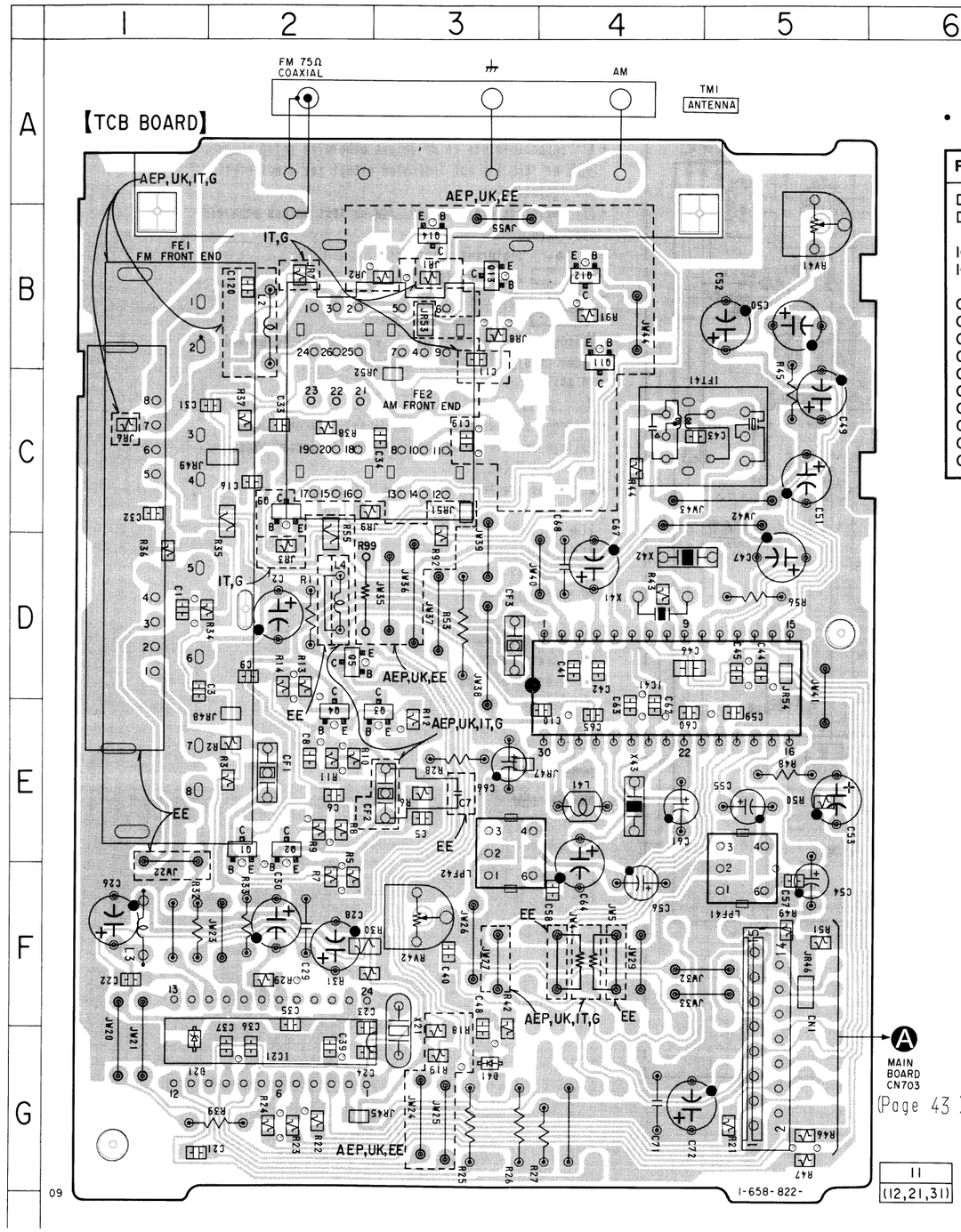
— MAIN SECTION —



09

6-3. PRINTED WIRING BOARD — TUNER SECTION — (AEP, UK, G, IT, EE MODEL)

• See page 18 for Circuit Boards Location.



• Semiconductor Location

Ref. No.	Location
D21	G-1
D41	G-3
IC21	G-2
IC41	D-4
Q1	E-2
Q2	E-2
Q3	E-3
Q4	E-2
Q5	D-2
Q9	C-2
Q11	B-4
Q12	B-4
Q13	B-3
Q14	B-3

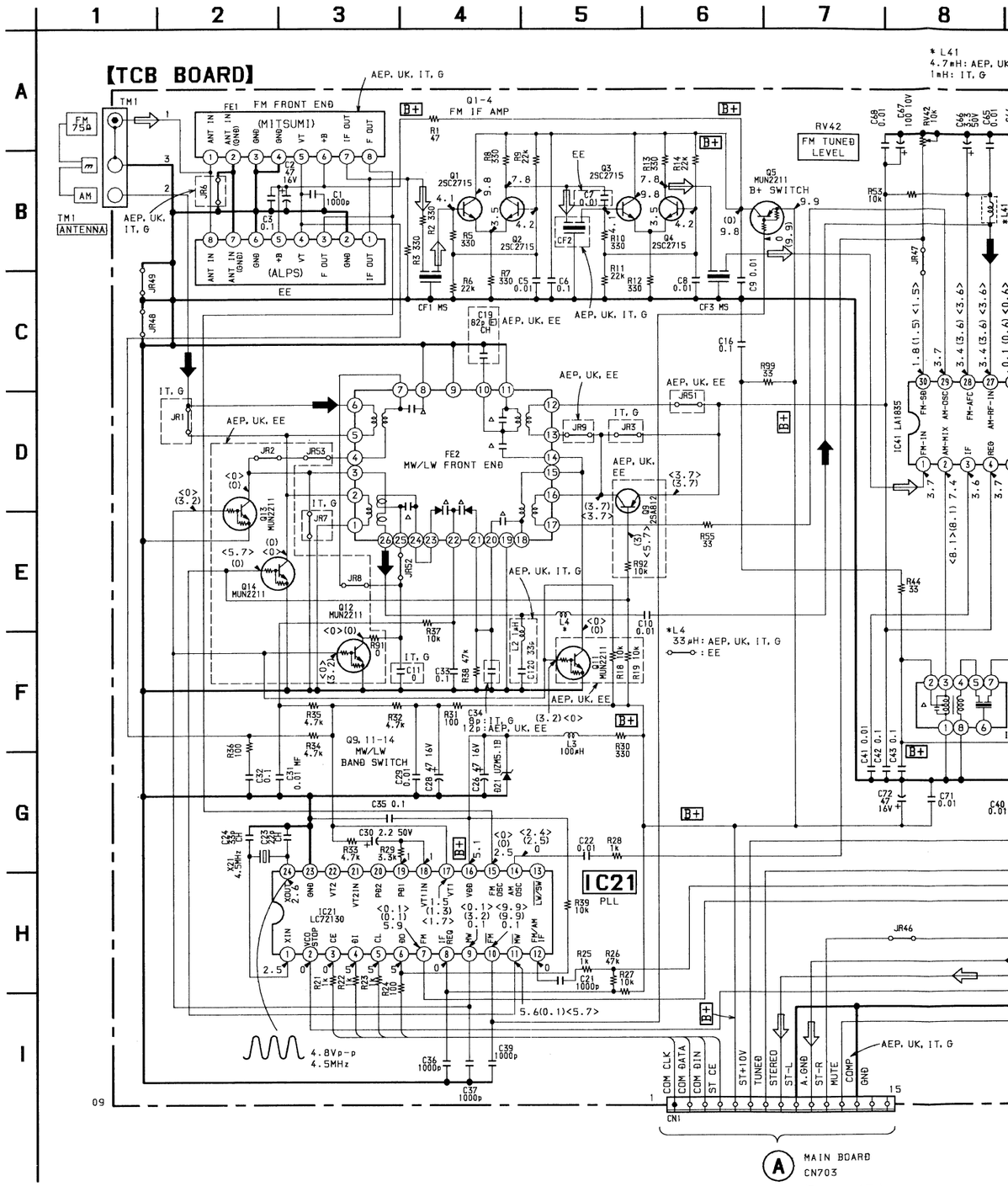
Note:

- ○—— : parts extracted from the component side.
- △ : Internal component.
- ▒▒ : Pattern from the side which enable seeing.

- Abbreviation
  G : German model.
  IT : Italian model.
  EE : East European model.

6-4. SCHEMATIC DIAGRAM — TUNER SECTION — (AEP, UK, G, IT, EE MODEL)

• See page 40 for IC Block Diagrams.



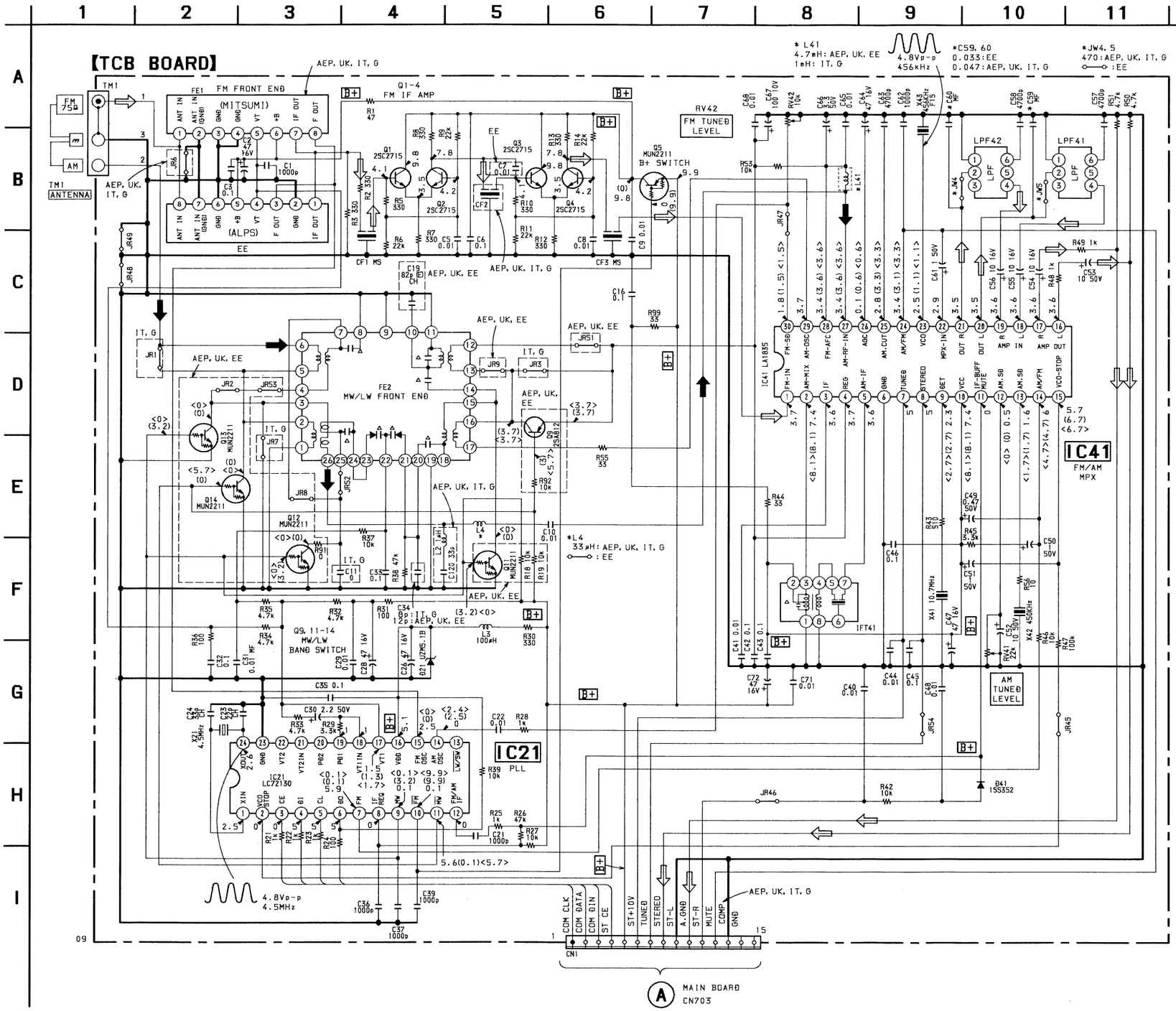
6-4. SCHEMATIC DIAGRAM — TUNER SECTION — (AEP, UK, G, IT, EE MODEL)

• See page 40 for IC Block Diagrams.

6

• Semiconductor Location

Ref. No.	Location
D21	G-1
D41	G-3
IC21	G-2
IC41	D-4
Q1	E-2
Q2	E-2
Q3	E-3
Q4	E-2
Q5	D-2
Q9	C-2
Q11	B-4
Q12	B-4
Q13	B-3
Q14	B-3



NOTE

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- △ : internal component.
- ▭ : panel designation.
- B+ : B+ Line.
- ▭ : adjustment for repair.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark: FM
  ( ): MW
  < >: LW
- Voltages are taken with a VOM (Input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Abbreviation
  G : German model.
  IT : Italian model.
  EE : East European model.
- Signal path.
  ⇨ : FM
  ➡ : AM

A MAIN BOARD CN703 (page 43)

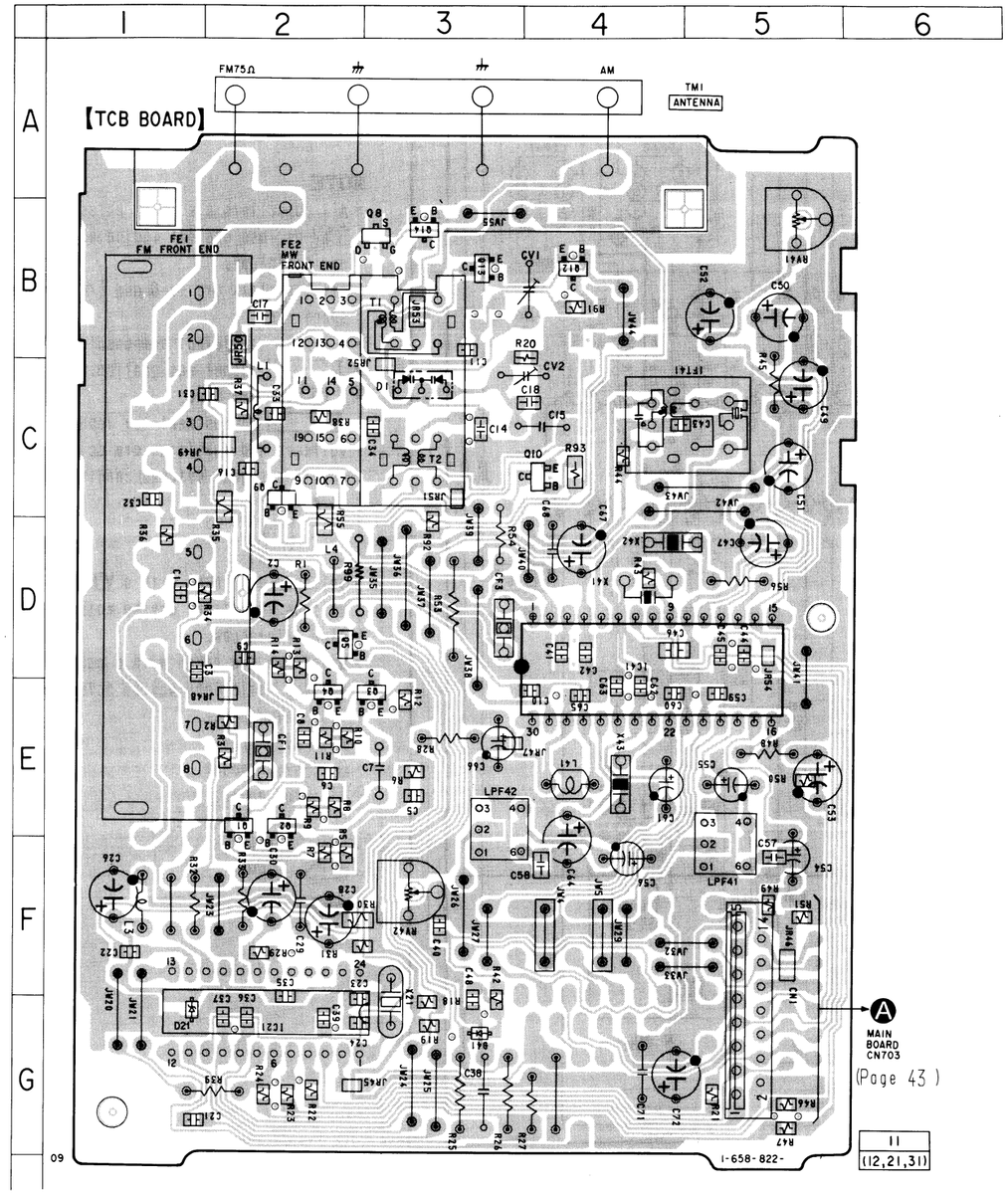
11 (12,21,31)

6-5. PRINTED WIRING BOARD — TUNER SECTION — (E, EA, SP, MY, TW, HK, IA, JE MODEL)

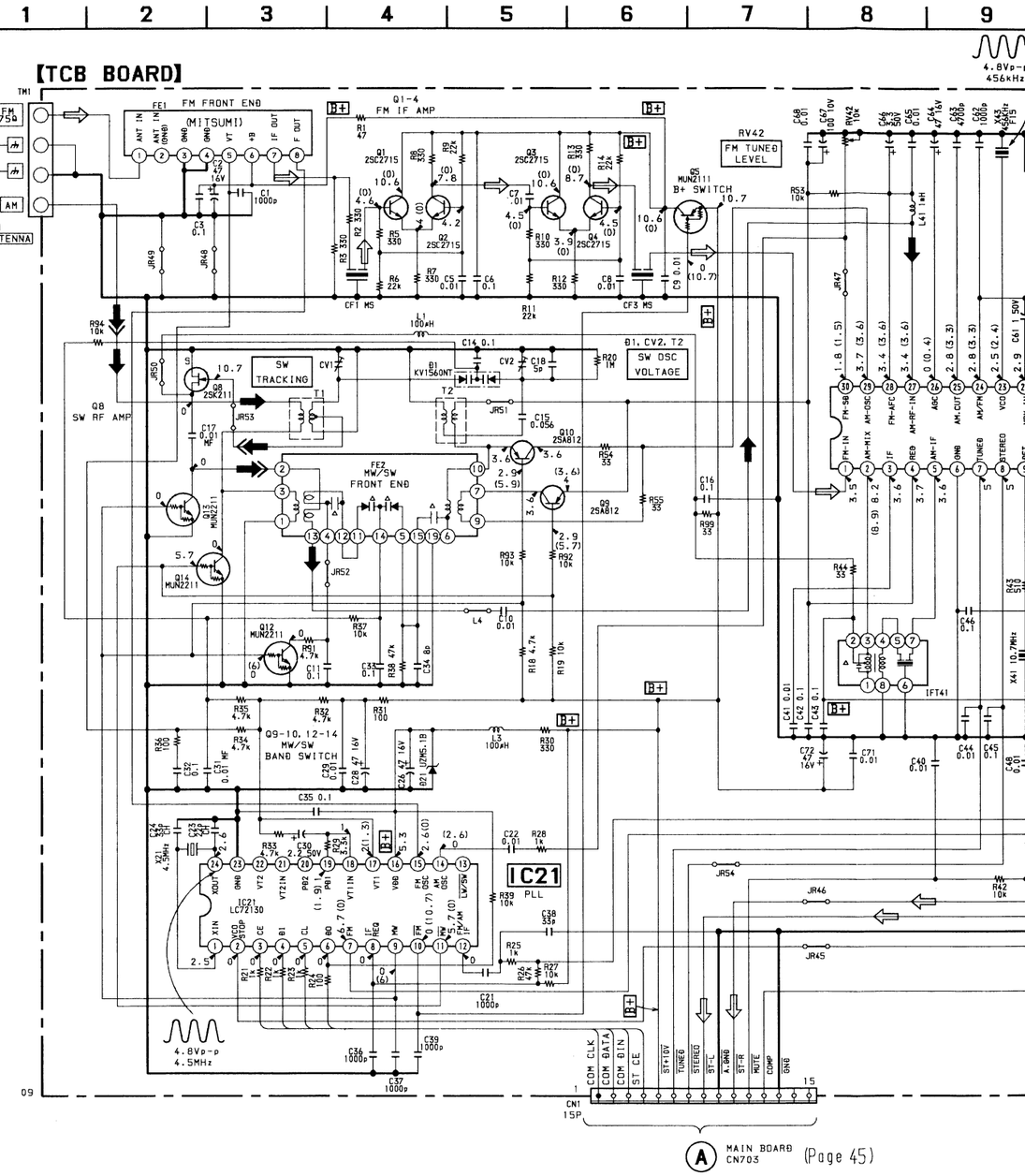
• See page 18 for Circuit Boards Location.

• Semiconductor Location

Ref. No.	Location
D1	C-3
D21	G-2
D41	G-4
D42	H-4
D43	H-4
IC21	G-2
IC41	E-5
Q1	F-2
Q2	F-3
Q3	E-3
Q4	E-3
Q5	E-3
Q8	B-3
Q9	D-3
Q10	D-4
Q12	B-5
Q13	B-4
Q14	B-3



6-6. SCHEMATIC DIAGRAM — TUNER SECTION — (E, EA, SP, MY, TW, HK, IA, JE MODEL)

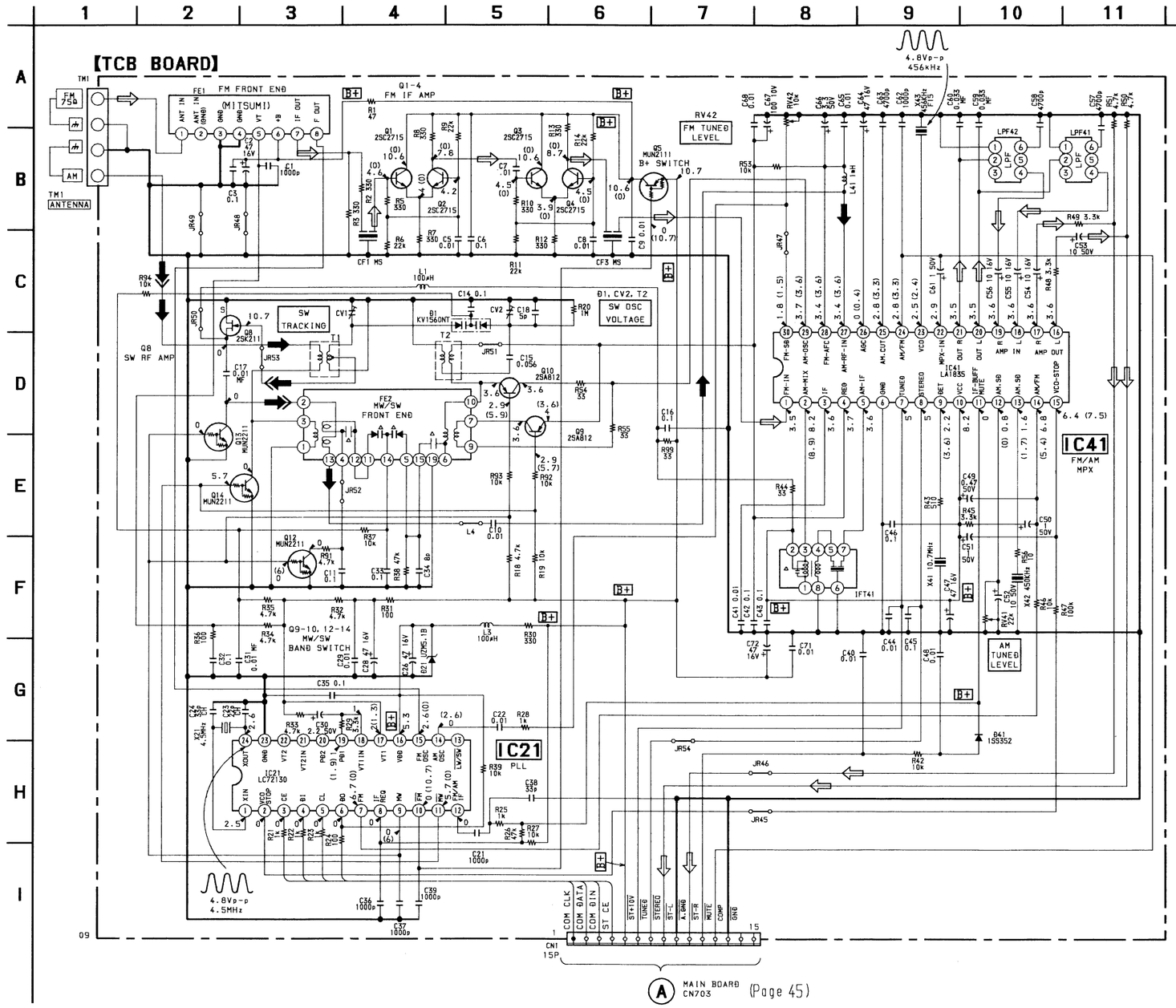


Note:

- ⟷ : parts extracted from the component side.
- △ : Internal component.
- ▒ : Pattern from the side which enable seeing.

- Abbreviation
  EA : Saudi Arabia model.
  SP : Singapore model.
  MY : Malaysia model.
  TW : Taiwan model.
  HK : Hong Kong model.
  IA : Indonesian model.
  JE : Tourist model.

6-6. SCHEMATIC DIAGRAM — TUNER SECTION — (E, EA, SP, MY, TW, HK, IA, JE MODEL)

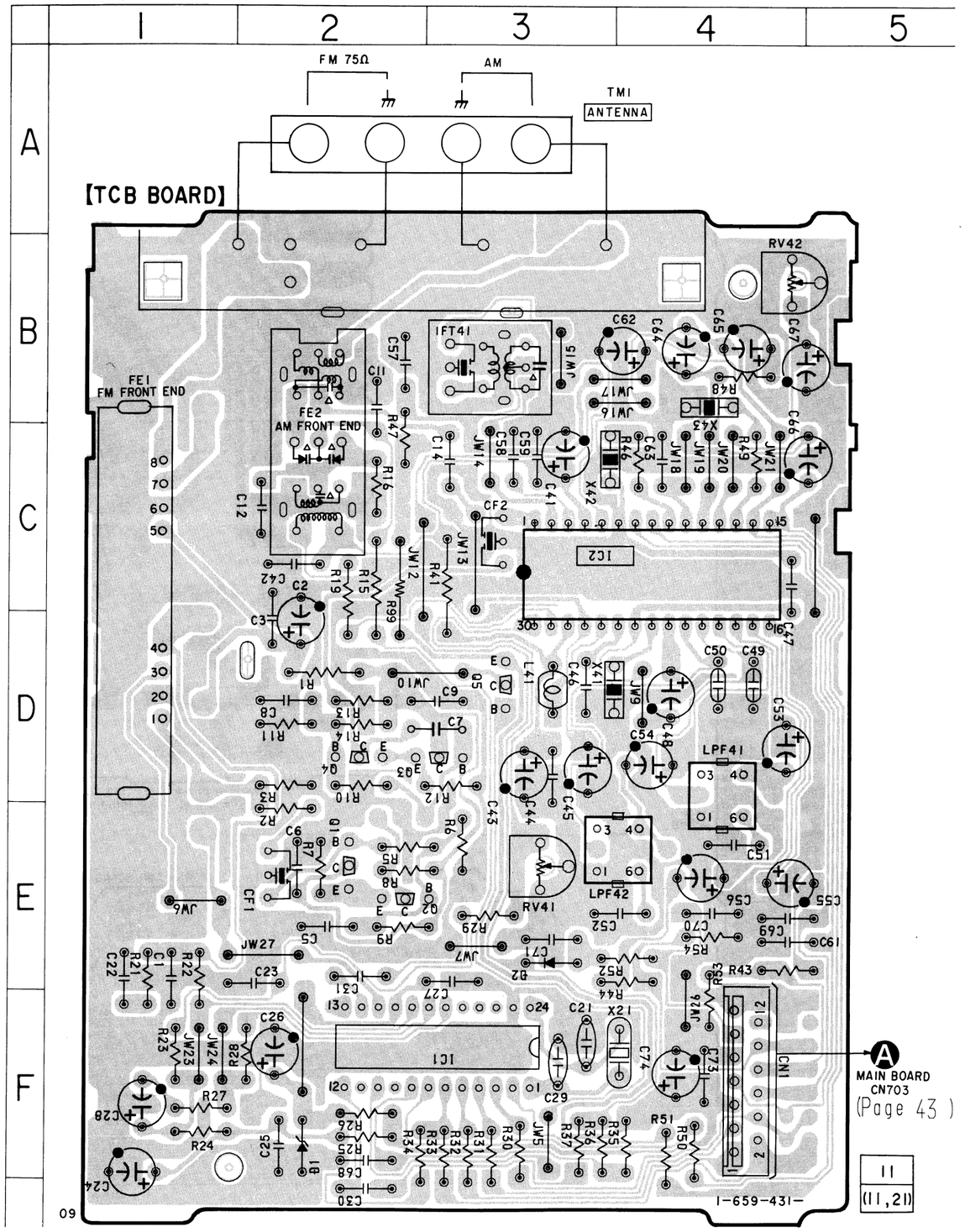


NOTE

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- △ :internal component.
- ▭ :panel designation.
- B+ :B+ Line.
- ▭ :adjustment for repair.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark: FM
  ( ): AM
- Voltages are taken with a VOM (Input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Abbreviation
  EA : Saudi Arabia model.
  HK : Hong Kong model.
  SP : Singapore model.
  MY : Malaysia model.
  TW : Taiwan model.
  IA : Indonesian model.
  JE : Tourist model.
- Signal path.
  ⇨ :FM
  ➡ :MW
  ➡ :SW

6-7. PRINTED WIRING BOARD — TUNER SECTION — (TH MODEL)

• See page 18 for Circuit Boards Location.



• Semiconductor Location

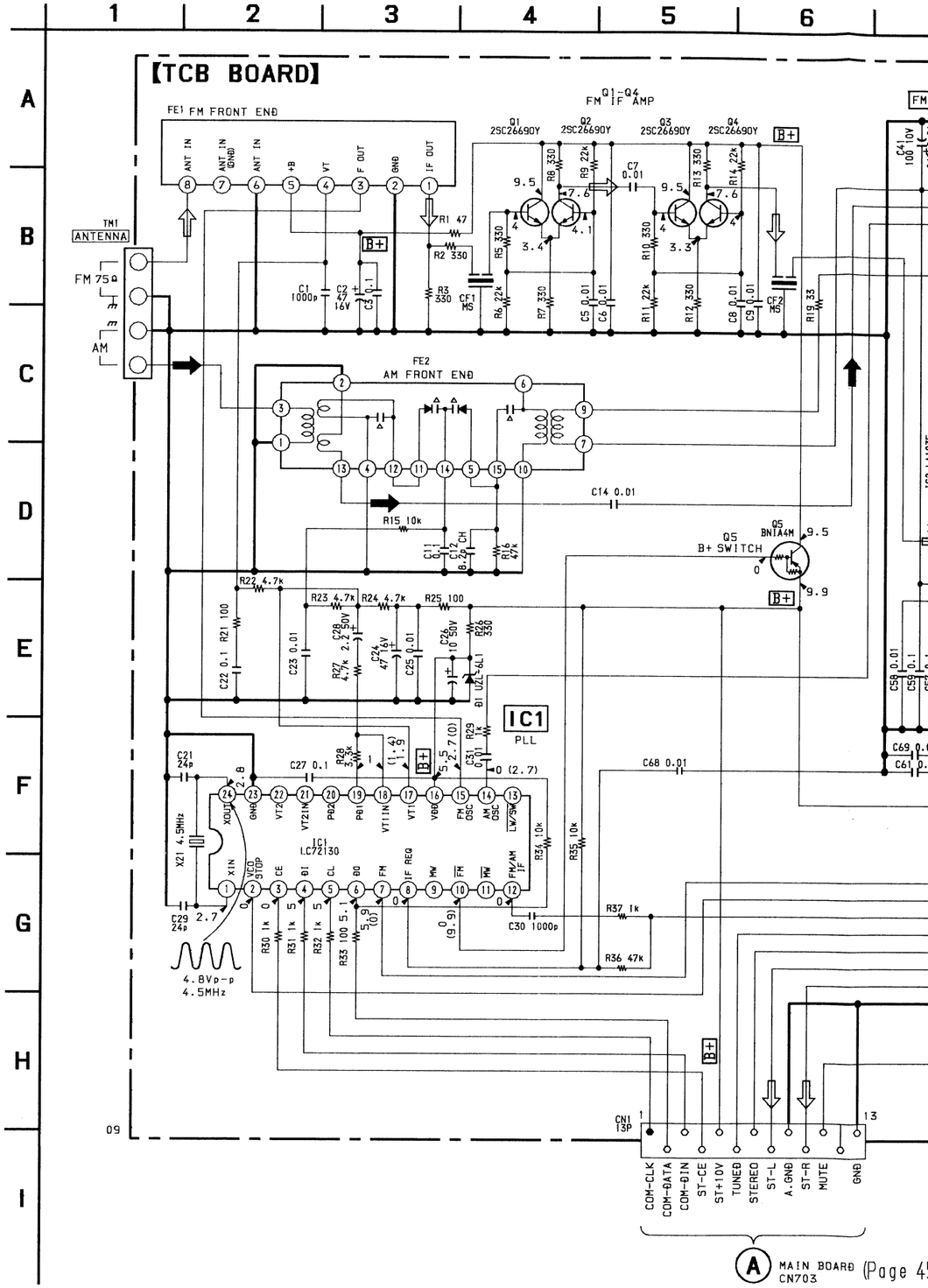
Ref. No.	Location
D1	F-2
D2	E-3
IC1	F-3
IC2	C-3
Q1	E-2
Q2	E-2
Q3	D-2
Q4	D-2
Q5	D-3

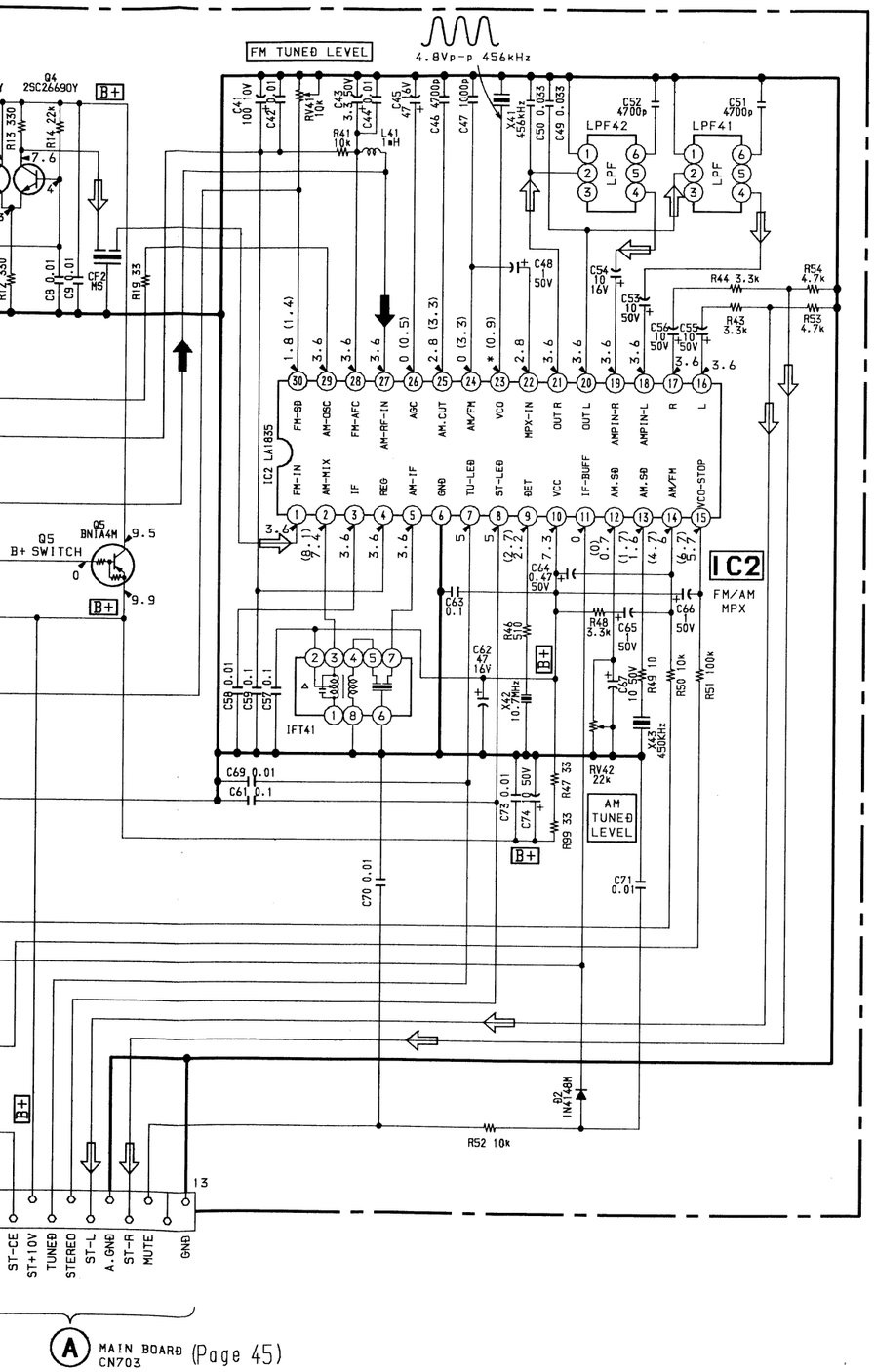
Note:

- ⟜ : parts extracted from the component side.
- △ : Internal component.
- ▒ : Pattern from the side which enable seeing.

- Abbreviation
  TH : Thailand model.

6-8. SCHEMATIC DIAGRAM — TUNER SECTION — (TH MODEL)



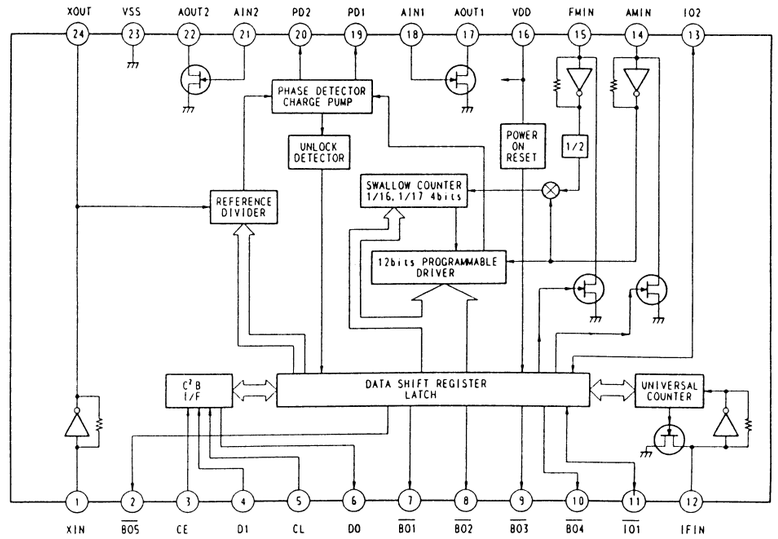


NOTE

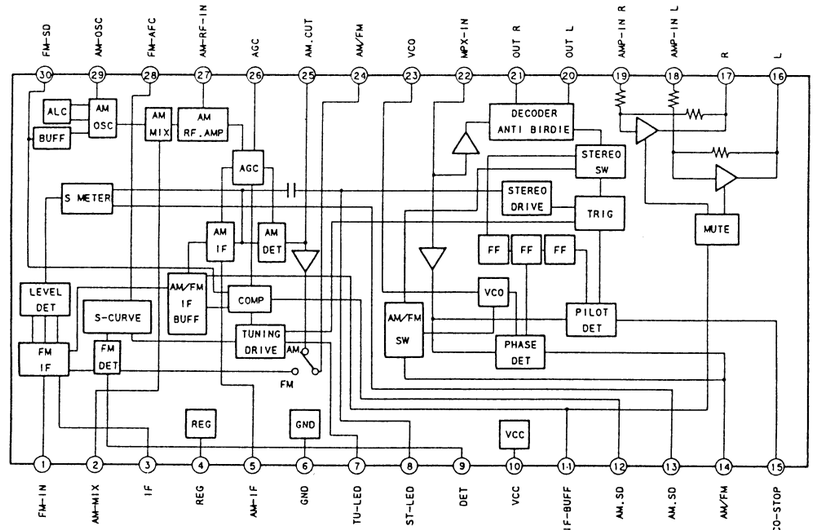
- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- △ :internal component.
- ▭ :panel designation.
- B+ :B+ Line.
- ▬ :adjustment for repair.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark: FM
  ( ): AM
  * :can not be measured.
- Voltages are taken with a VOM (Input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Abbreviation
  TH :Thailand model.
- Signal path.
  ⇨ :FM
  ➡ :AM

• IC Block Diagrams

IC1, 21 LC72130



IC2, 41 LA1835



• **Semiconductor Location**

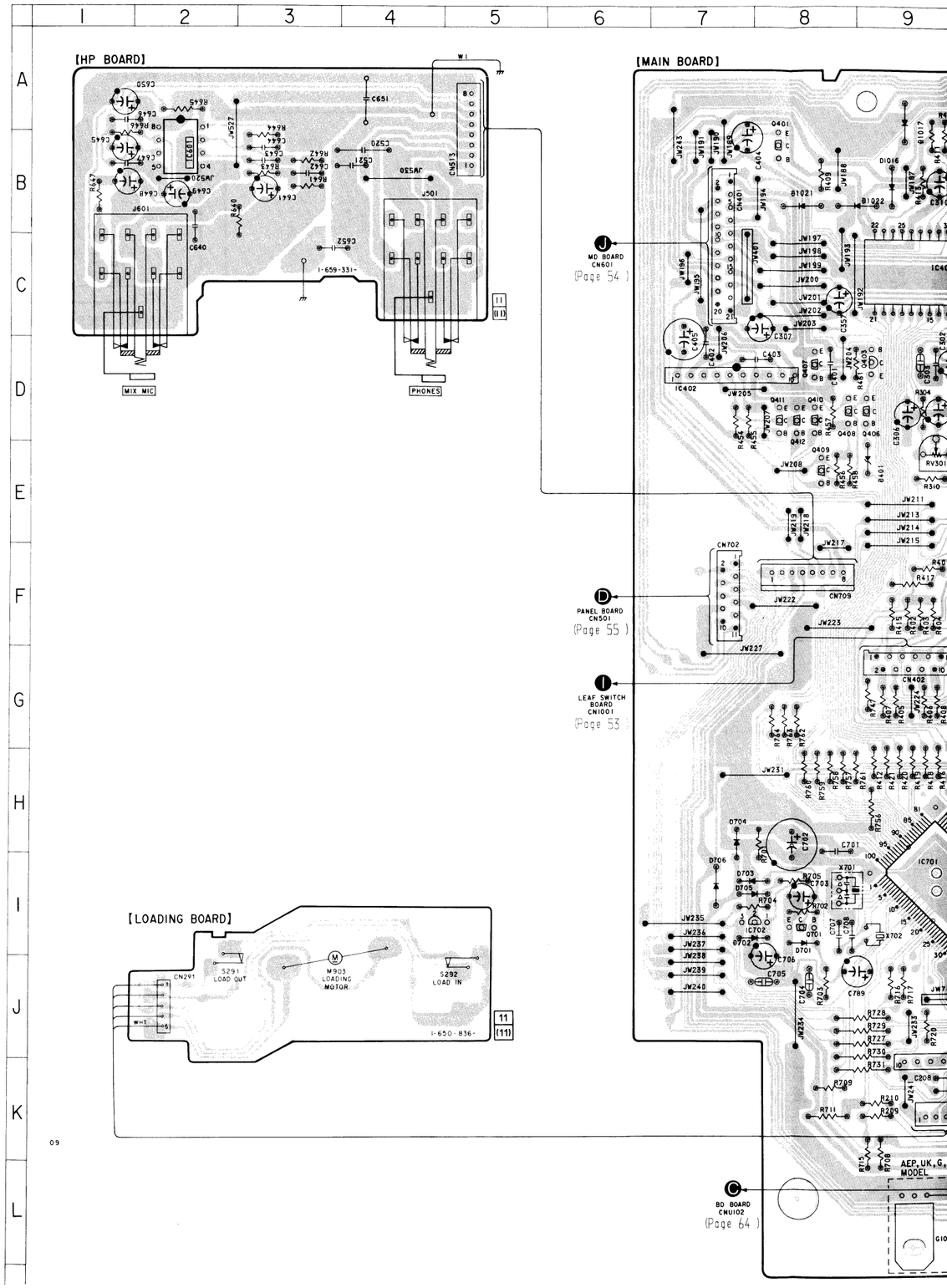
Ref. No.	Location	Ref. No.	Location
D201	J-12	IC201	J-10
D202	K-12	IC401	C-9
D205	K-10	IC402	D-7
D401	E-9	IC601	B-2
D701	I-8	IC701	I-9
D702	I-7	IC702	I-7
D703	I-7	IC802	B-14
D704	H-7	IC901	D-12
D705	I-7	IC1001	H-14
D706	H-7	IC1002	F-16
D707	K-11	IC1003	E-19
D708	G-11	IC1004	F-19
D1001	C-17	IC1201	K-24
D1002	C-17	IC1202	G-15
D1003	D-18		
D1004	C-18	Q301	E-10
D1005	D-18	Q351	B-11
D1006	C-18	Q401	A-8
D1007	G-14	Q402	E-9
D1008	C-15	Q403	D-9
D1009	D-19	Q406	D-9
D1010	F-19	Q407	D-8
D1011	B-16	Q408	D-8
D1013	D-15	Q409	E-8
D1014	D-15	Q410	D-8
D1016	B-9	Q411	D-8
D1017	A-9	Q412	D-8
D1018	G-13	Q701	I-8
D1021	B-8	Q820	G-11
D1022	B-9	Q901	F-11
D1023	D-15	Q902	F-12
D1059	E-18	Q951	F-11
D1069	F-18	Q952	F-11
D1095	C-13	Q953	G-12
D1096	F-12	Q954	G-12
D1097	G-17	Q1001	F-14
D1098	G-17	Q1002	F-14
D1099	F-16	Q1003	B-16
D1201	J-23	Q1006	E-15
D1202	I-26	Q1201	J-23
D1204	G-18	Q1204	H-15
D1205	H-16	Q1205	H-15
D1230	H-14	Q1206	H-16
D1250	D-17	Q1207	G-17
D1251	J-26	Q1208	H-16
D1309	B-18	Q1251	J-26
D1310	B-18		

Note:

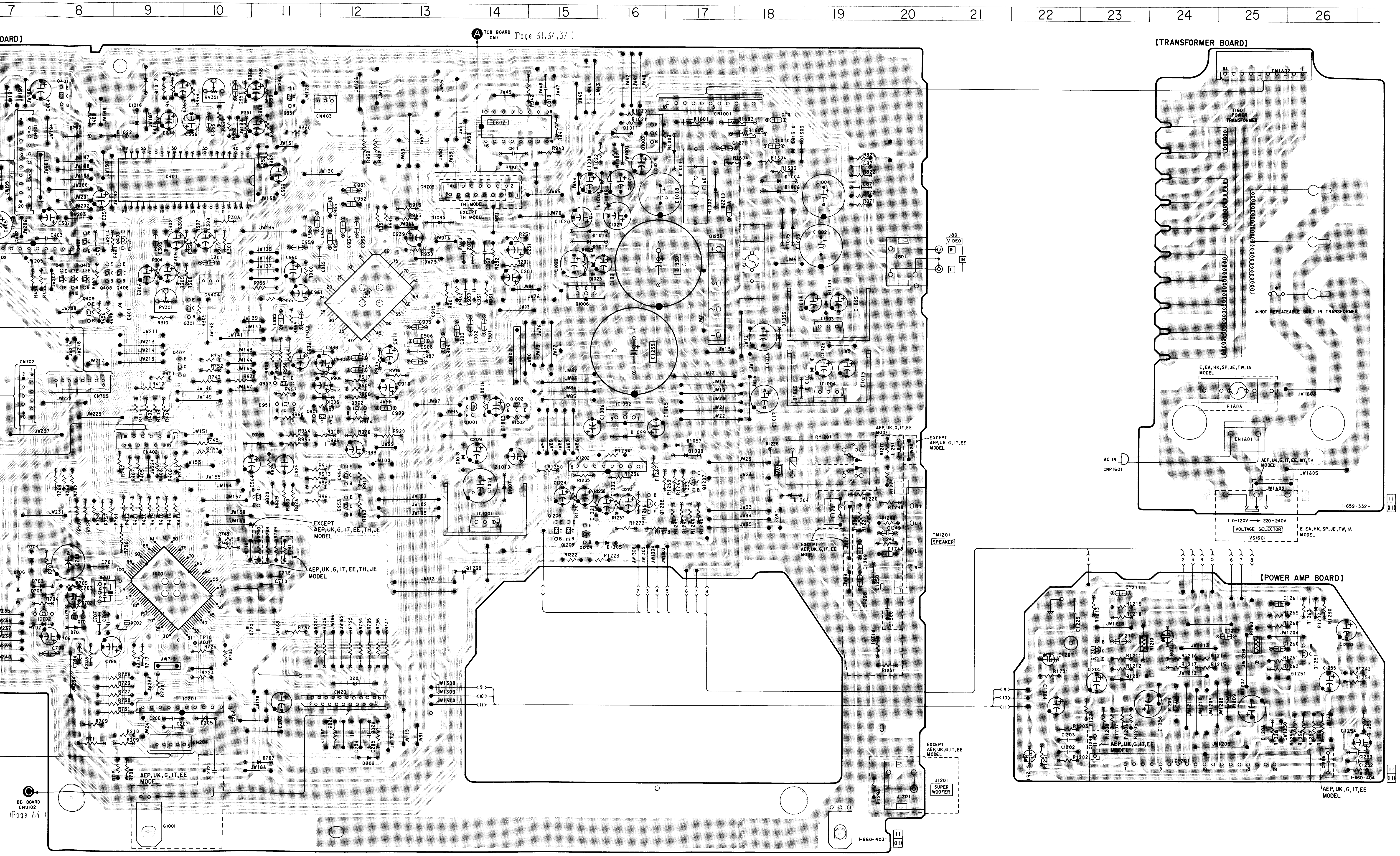
- ⊶— : parts extracted from the component side.
- △ : Internal component.
- ▒▒ : Pattern from the side which enable seeing.
- Abbreviation
  - G : German model.
  - IT : Italian model.
  - EE : East European model.
  - EA : Saudi Arabia model.
  - SP : Singapore model.
  - MY : Malaysia model.
  - TW : Taiwan model.
  - HK : Hong Kong model.
  - TH : Thailand model.
  - IA : Indonesian model.
  - JE : Tourist model.

6-9. PRINTED WIRING BOARD — MAIN SECTION —

• See page 18 for Circuit Boards Location. • See page 49 for Schematic Diagram. (MAIN BOARD (2/



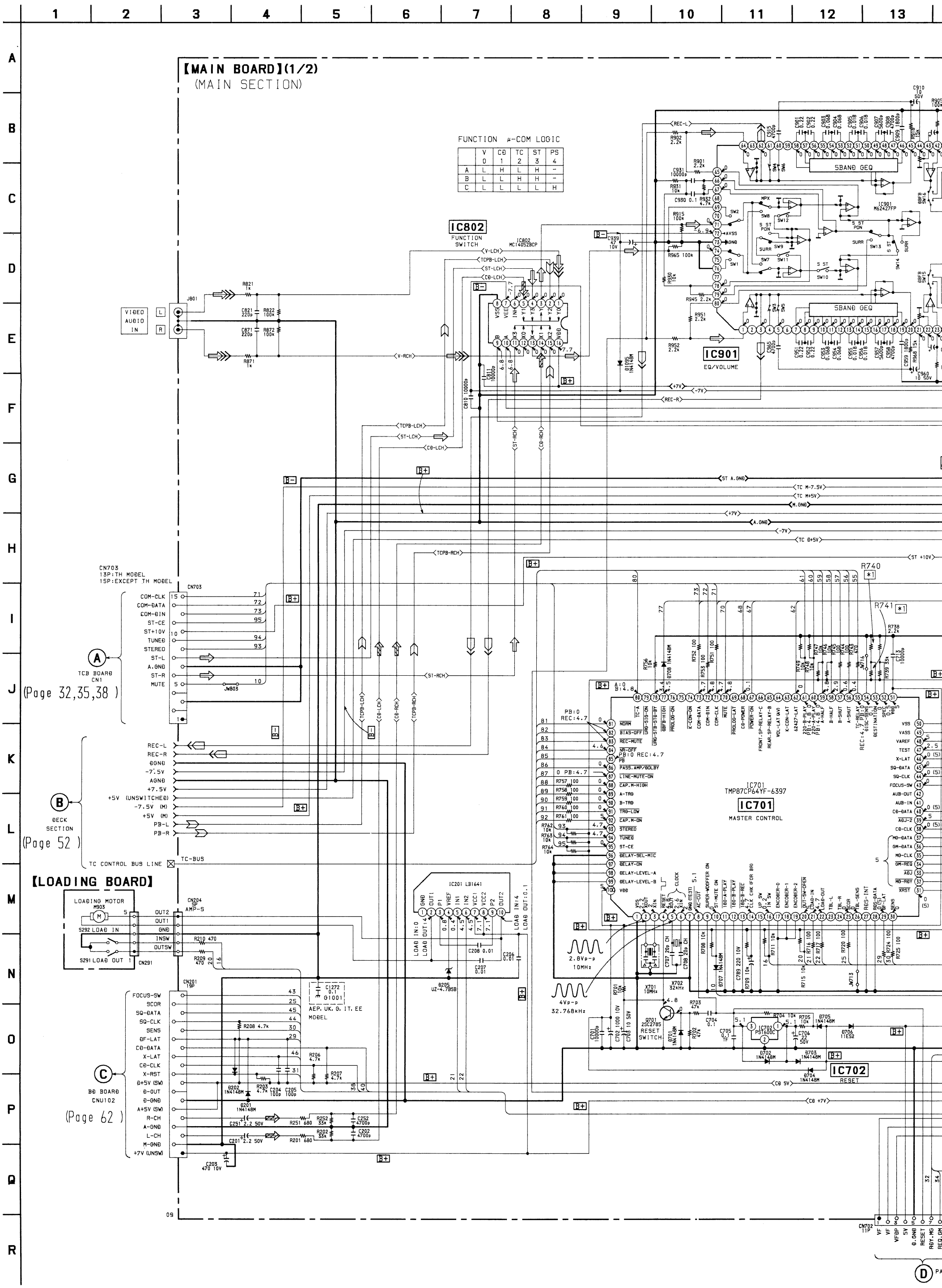
tic Diagram. (MAIN BOARD (2/2))

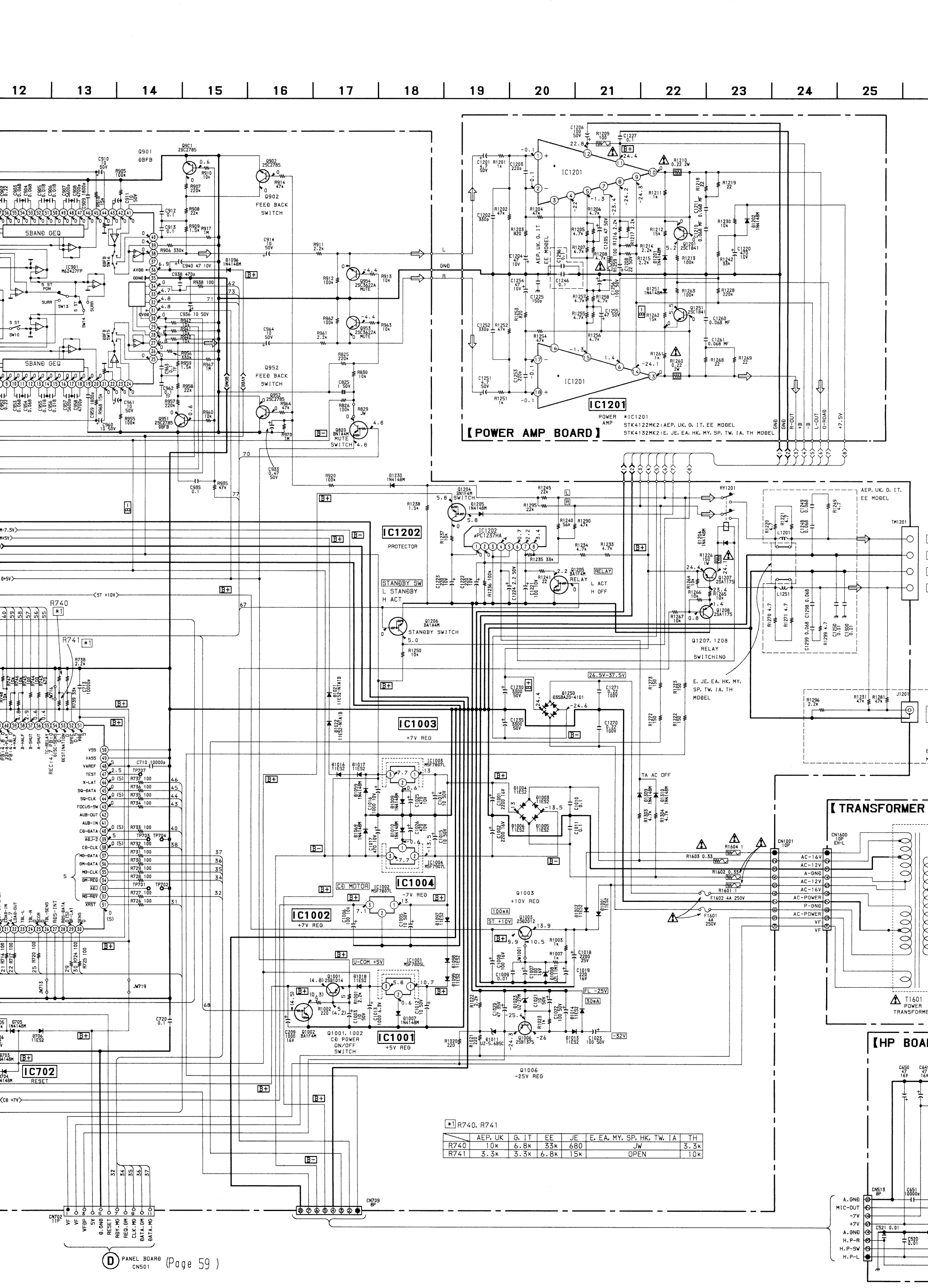


7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26
OARD]
TCB BOARD CN1 (Page 31,34,37)
[TRANSFORMER BOARD]
T1601 POWER TRANSFORMER
*NOT REPLACEABLE BUILT IN TRANSFORMER
E,EA,HK,SP,JE,TW,IA MODEL
F1603
CN1601
AC IN
CNP1601
AEP,UK,G,IT,EE,MY,TH MODEL
JW1605
JW1602
JW1603
110-120V → 220-240V
VOLTAGE SELECTOR
VS1601
1-659-332-
IC401
IC701
IC201
CN201
CN402
CN709
CN702
CN1001
IC1002
IC1003
IC1004
IC1202
RY1201
J801 VIDEO R L IN
TM1201 SPEAKER
J1201 SUPER WOOFER
TH MODEL
EXCEPT TH MODEL
EXCEPT AEP,UK,G,IT,EE,TH,JE MODEL
AEP,UK,G,IT,EE,TH,JE MODEL
AEP,UK,G,IT,EE MODEL
EXCEPT AEP,UK,G,IT,EE MODEL
BD BOARD CNU102 (Page 64)
G1001
1-660-403-
[POWER AMP BOARD]
IC1201
1-660-404-

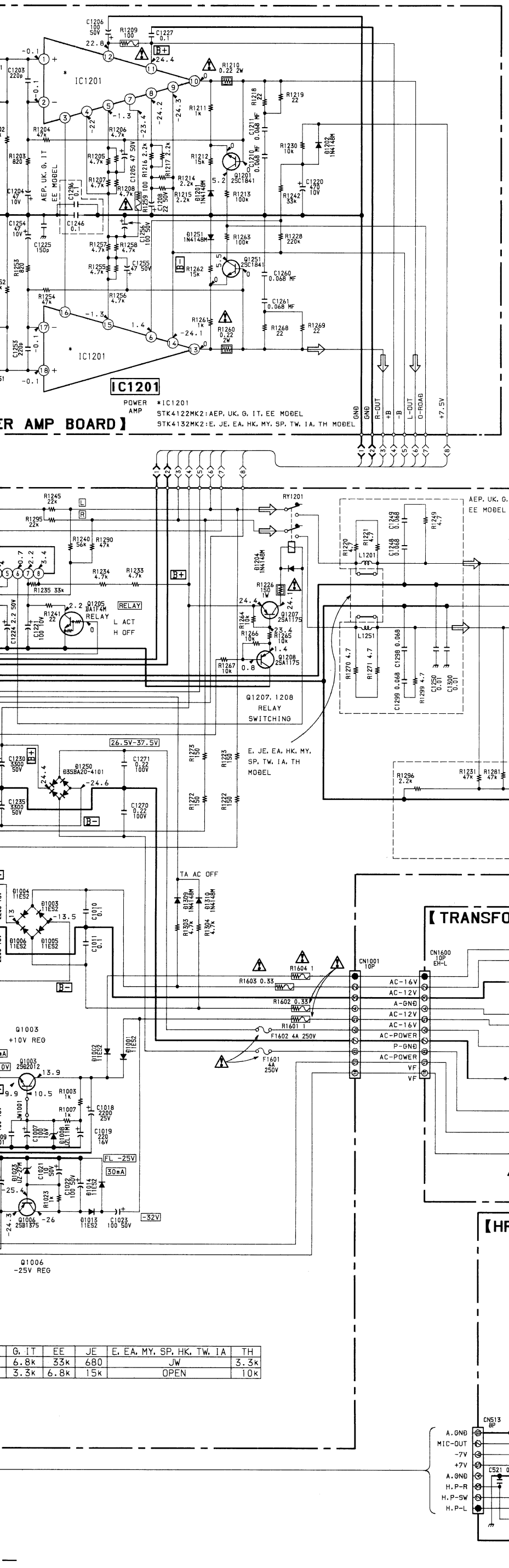
6-10. SCHEMATIC DIAGRAM — MAIN SECTION —

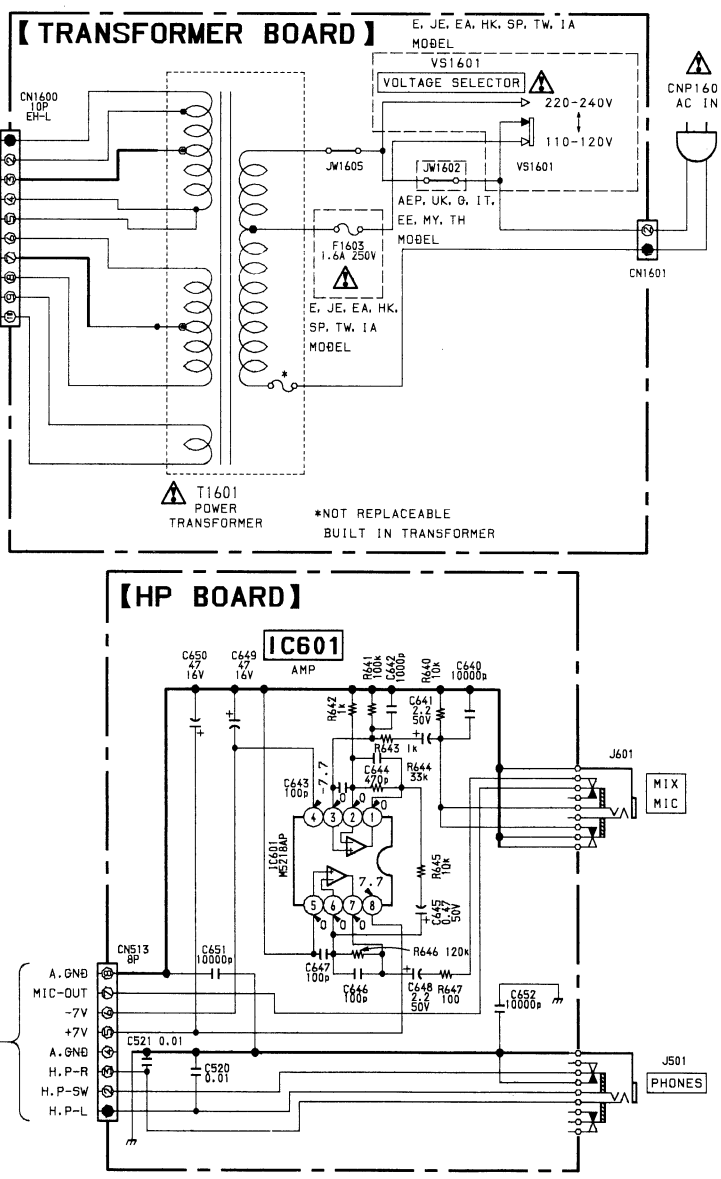
• See page 68 for IC Pin Function. (IC701)




12
13
14
15
16
17
18
19
20
21
22
23
24
25
【POWER AMP BOARD】
IC1201
POWER AMP
*IC1201
STK4122MK2: AEP, UK, G, IT, EE MODEL
STK4132MK2: E, JE, EA, HK, MY, SP, TW, IA, TH MODEL
AEP, UK, G, IT
EE MODEL
E, JE, EA, HK, MY, SP, TW, IA, TH MODEL
IC1202
PROTECTOR
IC1003
+7V REG
IC1004
-7V REG
IC1002
+7V REG
IC1001
+5V REG
IC702
RESET
Q1003
+10V REG
Q1006
-25V REG
Q1207, 1208
RELAY SWITCHING
RELAY
L ACT
H OFF
STANDBY SW
L STANDBY
H ACT
STANDBY SWITCH
Q1001, 1002
CD POWER ON/OFF SWITCH
CD MOTOR
MUTE SWITCH
FEED BACK SWITCH
5BAND GEQ
S ST
SURR
TA AC OFF
26.5V-37.5V
【TRANSFORMER
【HP BOA
T1601
POWER TRANSFORME
TM1201
RY1201
J1201
CN1600
CN1001
CN709
CN702
CN513
D PANEL BOARD CN501 (Page 59)
*1 R740, R741
AEP, UK
G, IT
EE
JE
E, EA, MY, SP, HK, TW, IA
TH
R740 10k 6.8k 33k 680 JW 3.3k
R741 3.3k 3.3k 6.8k 15k OPEN 10k

20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32





NOTE

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- △ :internal component.
- :nonflammable resistor.
- :fusible resistor.
- :panel designation.

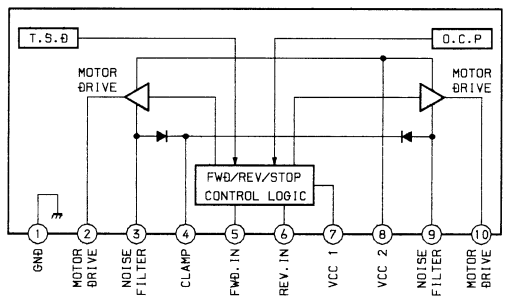
Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

- B+ :B+ Line.
- B- :B- Line.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark: FM
  ( ) : CD PLAY
- Voltages are taken with a VOM (Input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Abbreviation
  G :German model.
  IT :Italian model.
  EE :East European model.
  EA :Saudi Arabia model.
  MY :Malaysia model.
  HK :Hong Kong model.
  SP :Singapore model.
  TH :Thailand model.
  TW :Taiwan model.
  IA :Indonesian model.
  JE :Tourist model.
  JW :Jumper wire.
- Signal path.
  :FM
  :VIDEO
  :PB
  :REC
  :CD

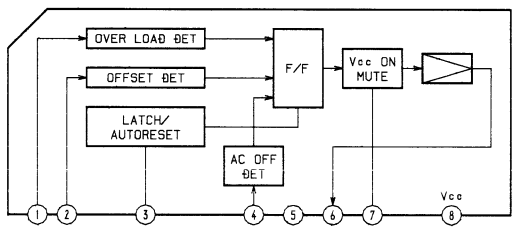
	G, IT	EE	JE	E, EA, MY, SP, HK, TW, IA	TH
	6.8k	33k	680	JW	3.3k
	3.3k	6.8k	15k	OPEN	10k

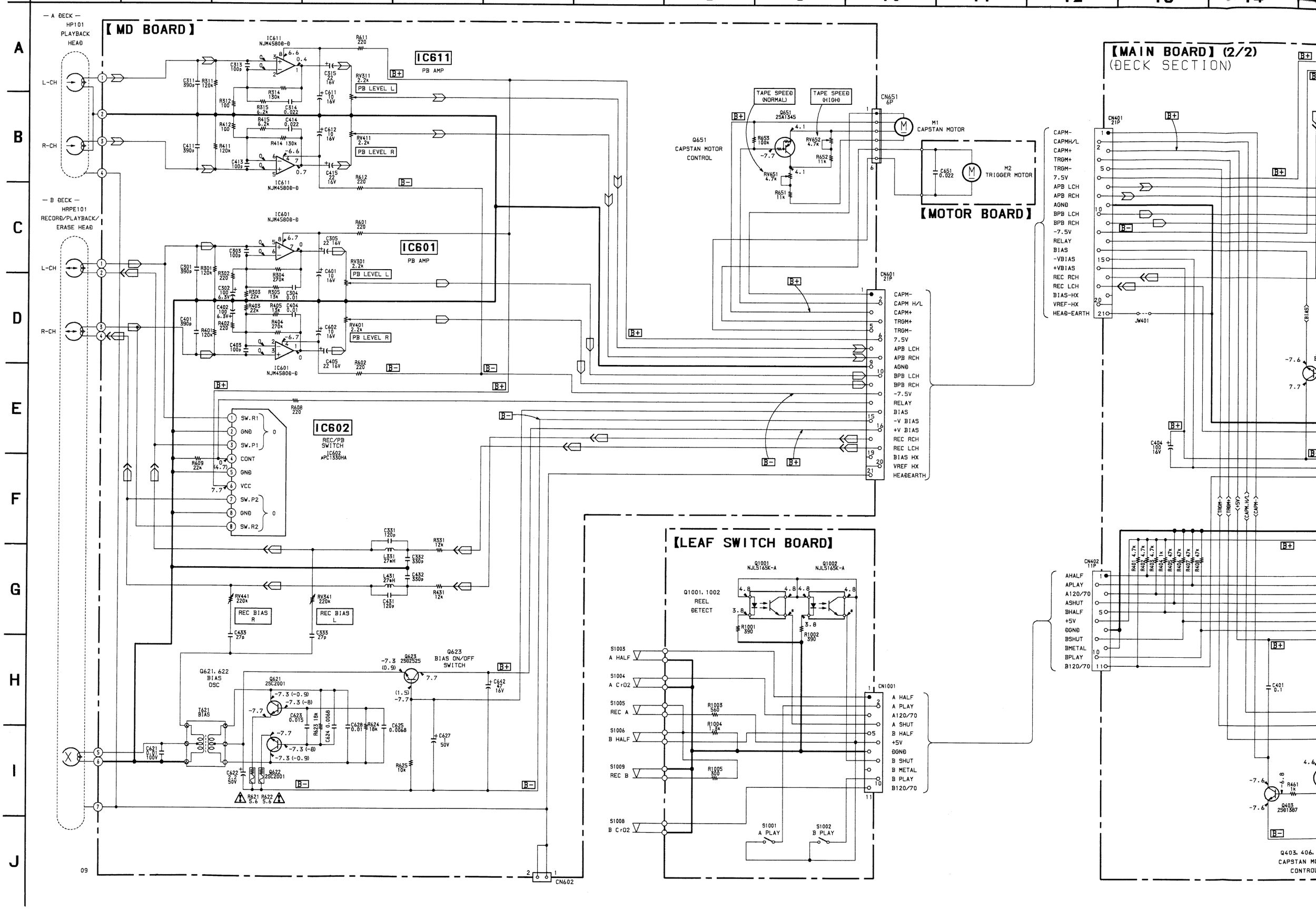
· IC BLOCK DIAGRAM

IC201 LB1641

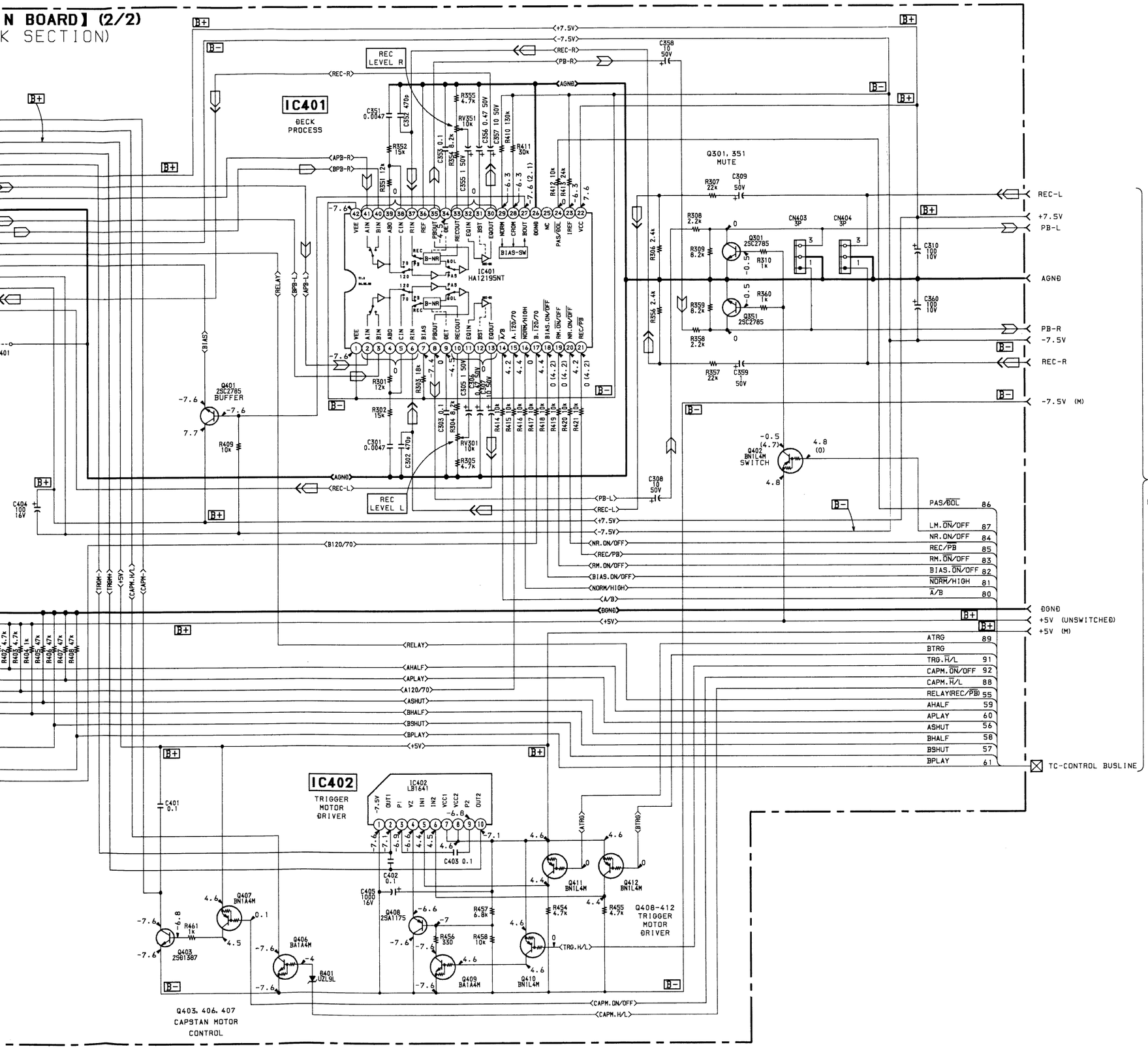


IC1202 μPC1237HA




【MD BOARD】
— A DECK —
HP101
PLAYBACK
HEAD
L-CH
R-CH
IC611
NJM4580B-D
IC611
PB AMP
PB LEVEL L
PB LEVEL R
— B DECK —
HRPE101
RECORD/PLAYBACK/
ERASE HEAD
IC601
NJM4580B-D
IC601
PB AMP
IC602
REC/PB
SWITCH
IC602
μPC1330HA
SW.R1
GND
SW.P1
CONT
GND
VCC
SW.P2
GND
SW.R2
REC BIAS
R
REC BIAS
L
Q621, 622
BIAS
OSC
Q623
BIAS ON/OFF
SWITCH
Q623
2SB2525
Q621
2SC2001
Q622
2SC2001
T621
BIAS
TAPE SPEED
(NORMAL)
TAPE SPEED
(HIGH)
Q651
2SA1345
Q651
CAPSTAN MOTOR
CONTROL
CN651
6P
M1
CAPSTAN MOTOR
M2
TRIGGER MOTOR
【MOTOR BOARD】
CN601
21P
CAPM-
CAPM H/L
CAPM+
TRGM+
TRGM-
7.5V
APB LCH
APB RCH
AGND
BPB LCH
BPB RCH
-7.5V
RELAY
BIAS
-V BIAS
+V BIAS
REC RCH
REC LCH
BIAS HX
VREF HX
HEADEARTH
CN602
【LEAF SWITCH BOARD】
Q1001
NJL5165K-A
Q1002
NJL5165K-A
Q1001, 1002
REEL
DETECT
S1003
A HALF
S1004
A CrO2
S1005
REC A
S1006
B HALF
S1009
REC B
S1008
B CrO2
S1001
A PLAY
S1002
B PLAY
CN1001
A HALF
A PLAY
A120/70
A SHUT
B HALF
+5V
DGND
B SHUT
B METAL
B PLAY
B120/70
【MAIN BOARD】 (2/2)
(DECK SECTION)
CN401
21P
JW401
CN402
11P
AHALF
APLAY
A120/70
ASHUT
BHALF
+5V
DGND
BSHUT
BMETAL
BPLAY
B120/70
Q403, 406
CAPSTAN MO
CONTROL

N BOARD] (2/2)
K SECTION)



NOTE

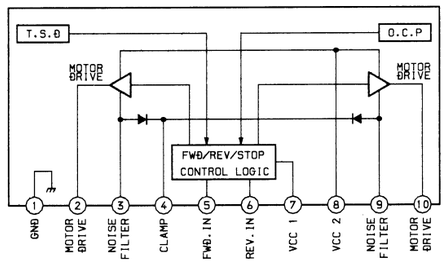
- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- ⚠ : fusible resistor.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

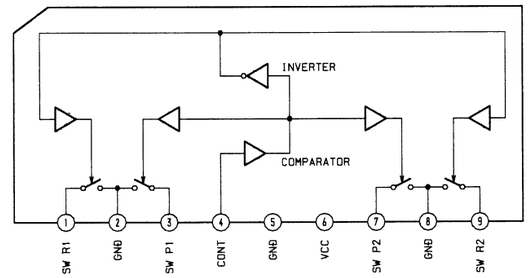
- B+ : B+ Line.
- B− : B− Line.
- ▭ : adjustment for repair.
- Voltages and waveforms are dc with respect to ground under no-signal conditions.
  no mark: PLAY
  ( ) : REC
  * : can not be measured.
- Voltages are taken with a VOM (Input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Signal path.
  : PB (DECK A)
  : PB (DECK B)
  : REC (DECK B)

B
MAIN SECTION
(Page 45)

IC402 LB1641

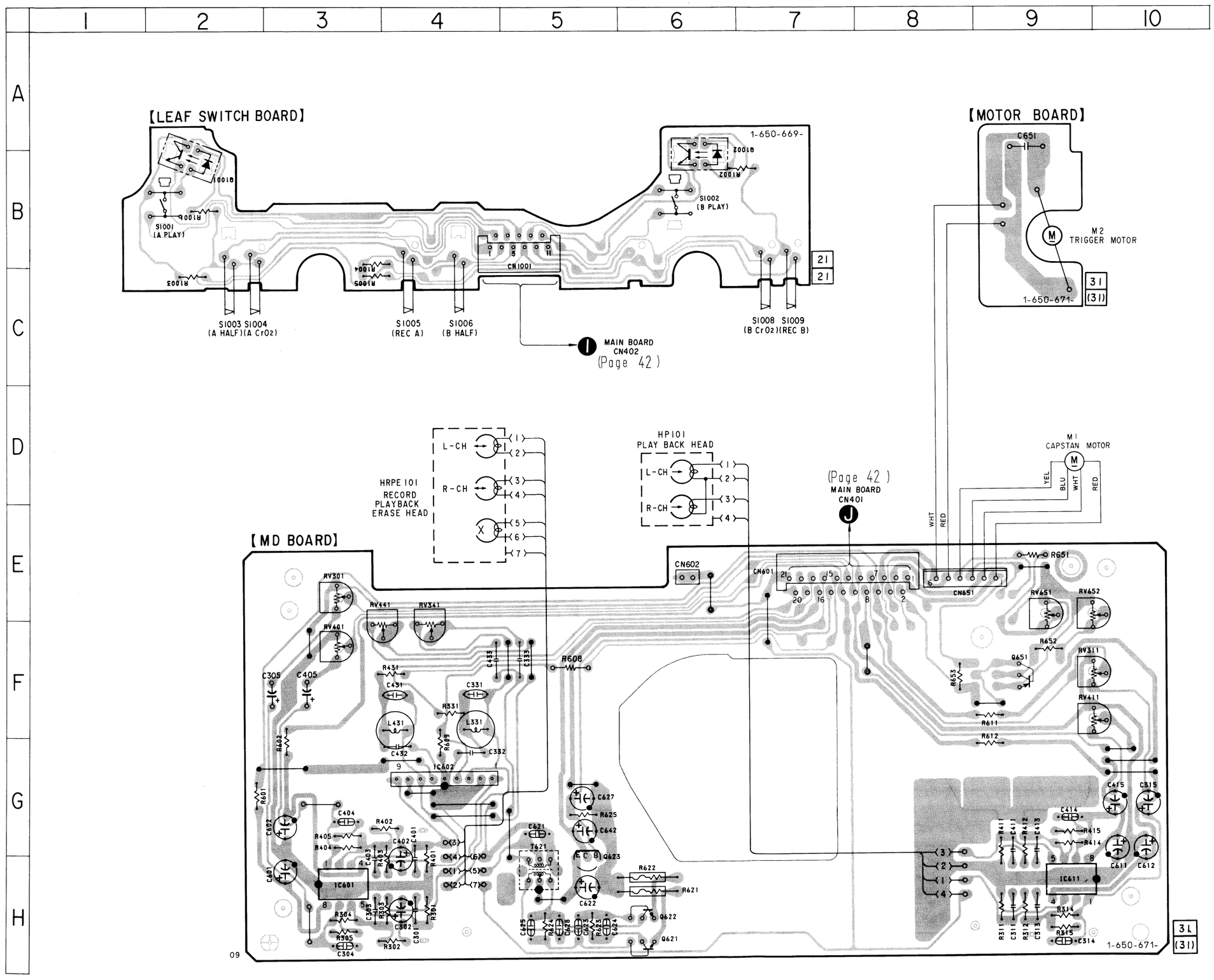


μPC1330HA



6-12. PRINTED WIRING BOARD — DECK SECTION —

• See page 18 for Circuit Boards Location.



• **Semiconductor Location**

Ref. No.	Location
IC601	H-3
IC602	G-4
IC611	H-9
Q621	I-6
Q622	H-6
Q623	H-5
Q651	F-9
Q1001	B-2
Q1002	B-6

Note:

• ○—— : parts extracted from the component side.

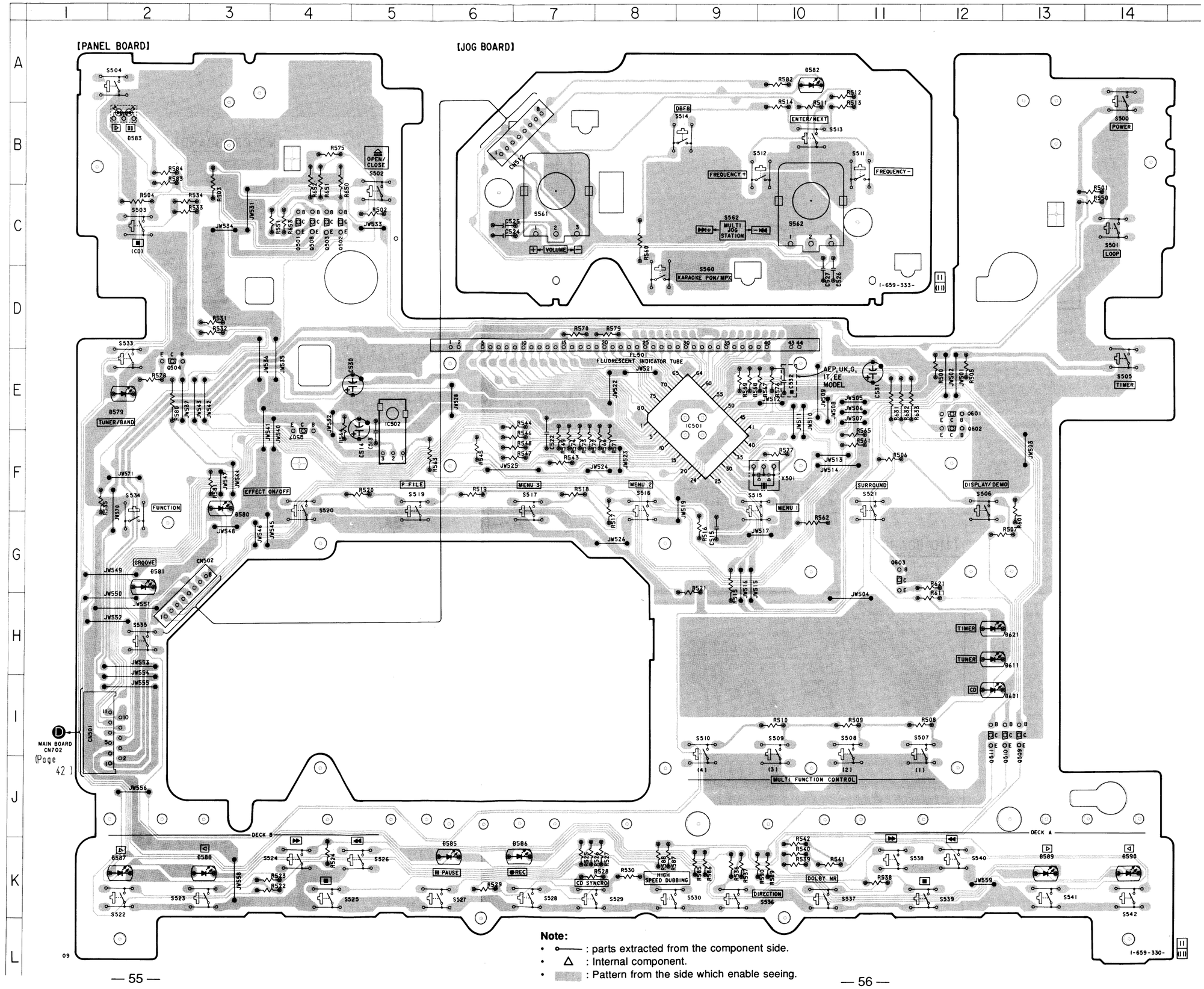
• ▒▒ : Pattern from the side which enable seeing.

6-13. PRINTED WIRING BOARD — PANEL SECTION —

• See page 18 for Circuit Boards Location.

• Semiconductor Location

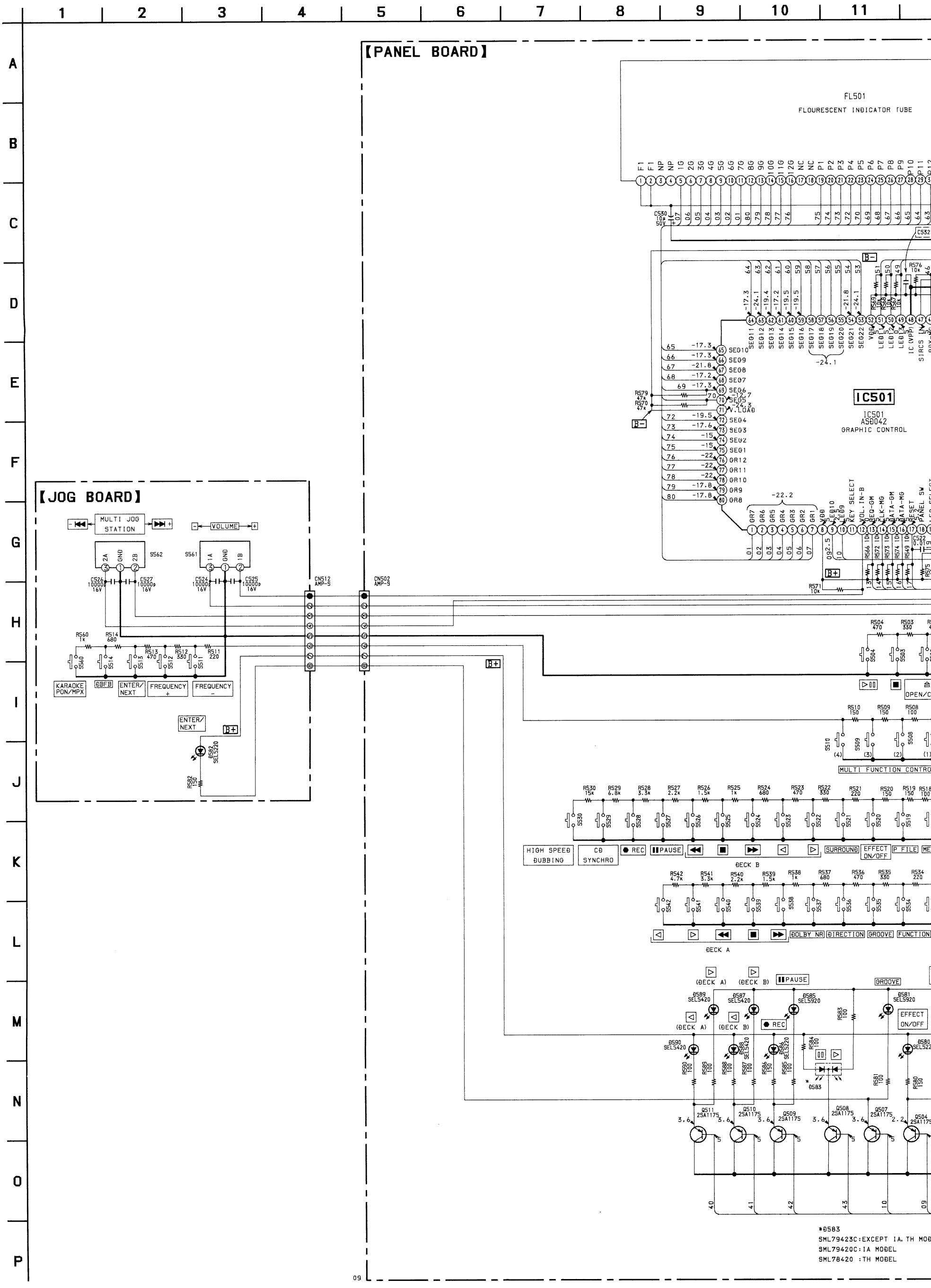
Ref. No.	Location
D579	E-2
D580	F-3
D581	G-2
D582	A-10
D583	B-2
D585	K-6
D586	K-6
D587	K-2
D588	K-3
D589	K-13
D590	K-14
D601	I-12
D611	H-12
D621	H-12
IC501	E-9
IC502	E-5
Q501	C-4
Q502	C-4
Q503	C-4
Q504	E-2
Q507	F-4
Q508	C-4
Q509	I-13
Q510	I-12
Q511	I-12
Q601	E-12
Q602	E-12
Q603	G-11



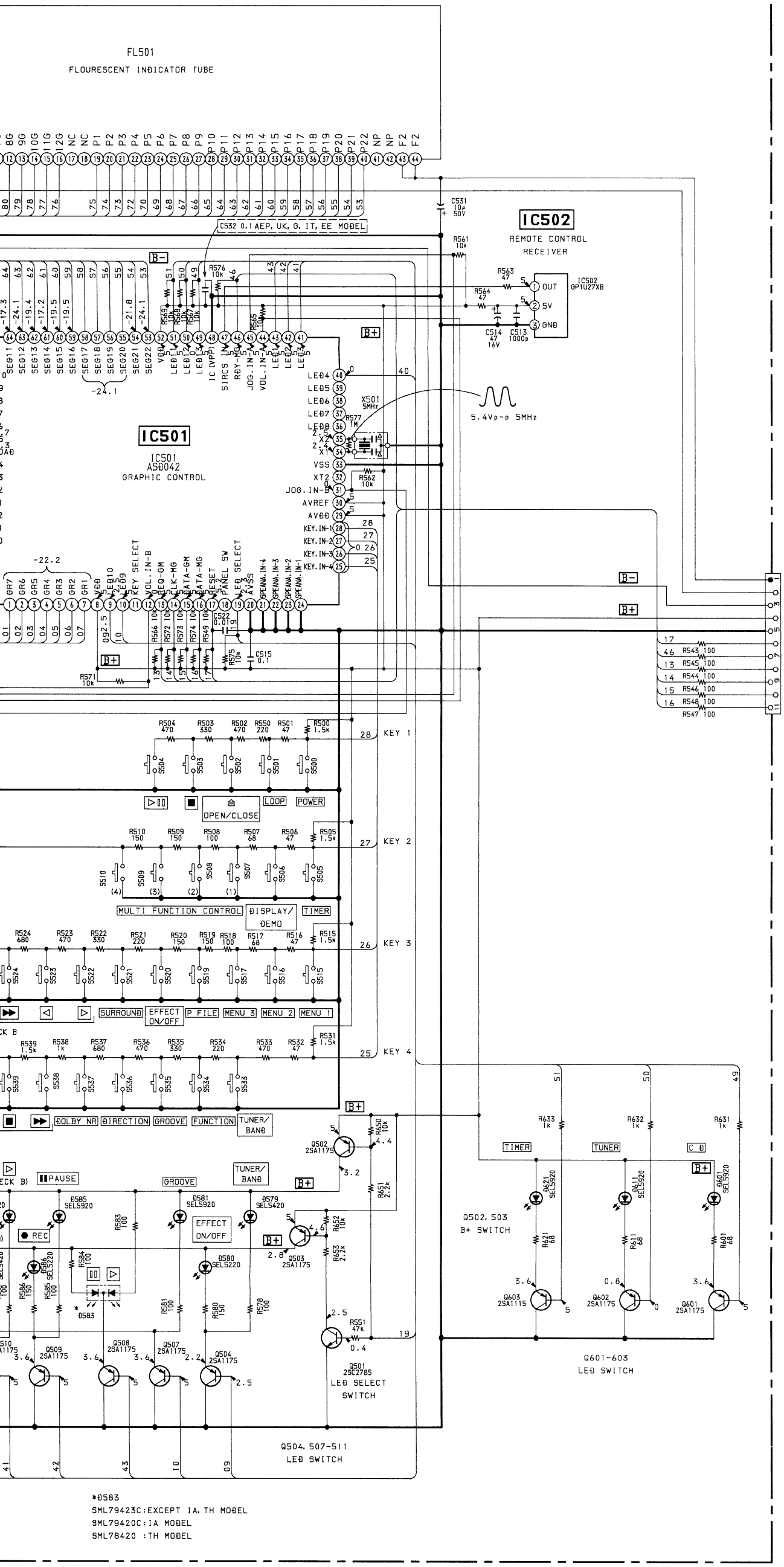
Note:
- ——o—— : parts extracted from the component side.
- △ : Internal component.
- ▒▒ : Pattern from the side which enable seeing.

6-14. SCHEMATIC DIAGRAM — PANEL SECTION —

• See page 67 for IC Pin Function. (IC501)



10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20

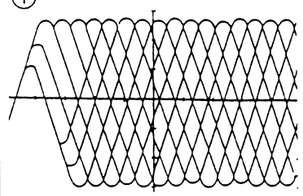


NOTE

- All capacitors are in μF unless otherwise noted. pF: μμF
  50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- △ :internal component.
- [ ] :panel designation.
- B+ :B+ Line.
- B− :B− Line.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark:FM
- Voltages are taken with a VOM (Input impedance 10MΩ).
  Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope.
  Voltage variations may be noted due to normal production tolerances.
- Abbreviation
  G :German model.
  IT :Italian model.
  EE :East European model.
  IA :Indonesian model.
  TH :Thailand model.

• **Waveforms**

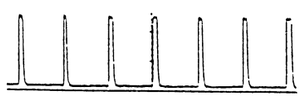
① IC101 ㉛ pin 1.3 Vp-p



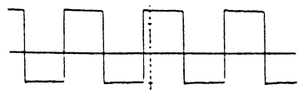
② IC101 ㊹ pin 8mVp-p 0.2ms/DIV

③ IC101 ② pin 20mVp-p 2ms/DIV

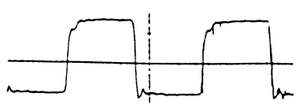
④ IC103 ③ pin 2.4Vp-p 7.5µsec



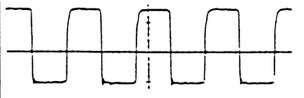
⑤ IC103 ㉘ pin 5.1mVp-p 137µsec



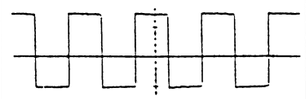
⑥ IC103 ㉕ pin 5.1Vp-p 232.7sec



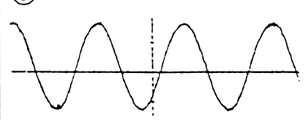
⑦ IC103 ㉒ pin 5.1Vp-p 472.7nsec



⑧ IC103 ⑳ pin 5.1Vp-p 23µsec

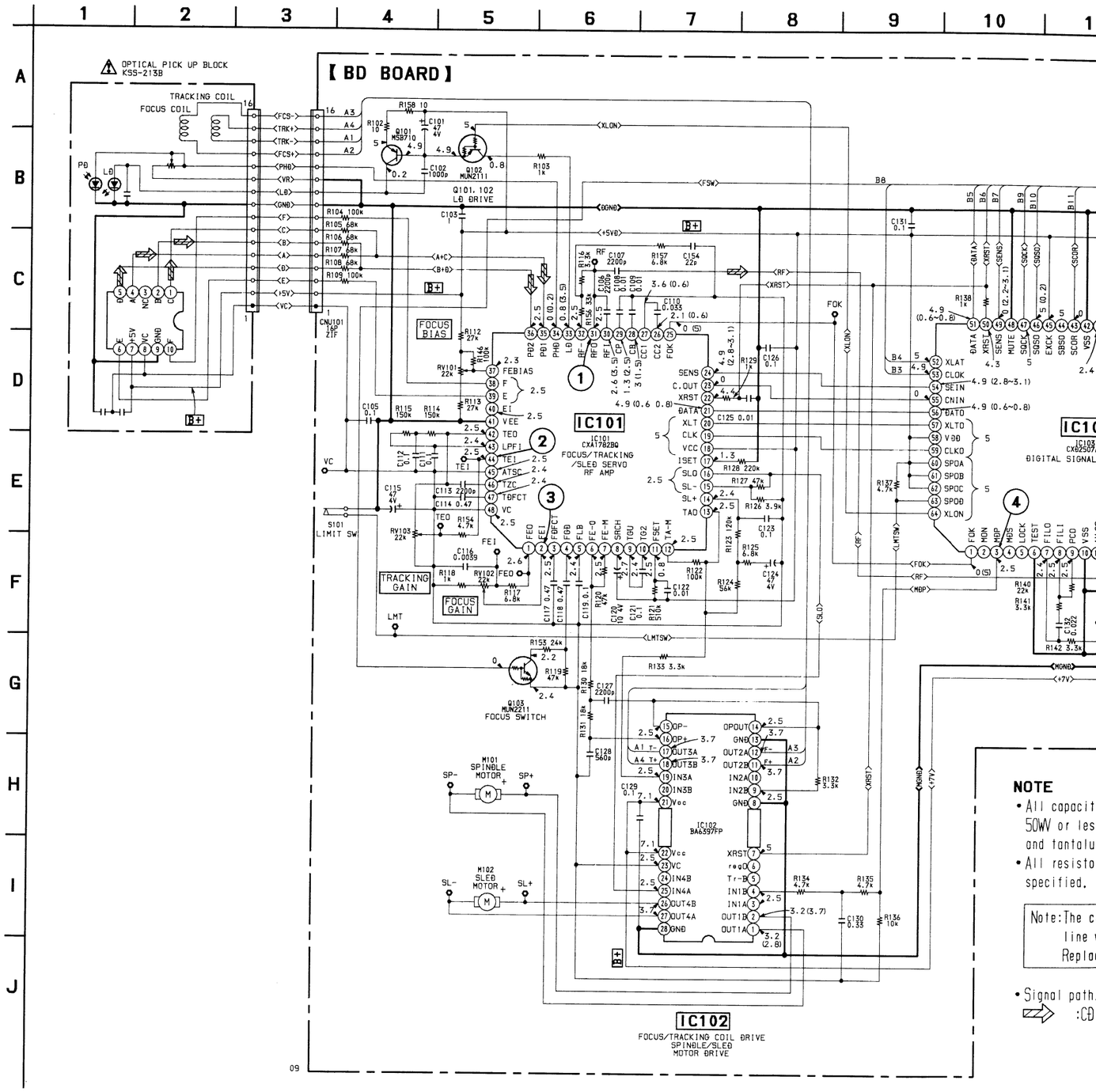


⑨ IC104 ⑤ pin 3Vp-p 16.9344MHz



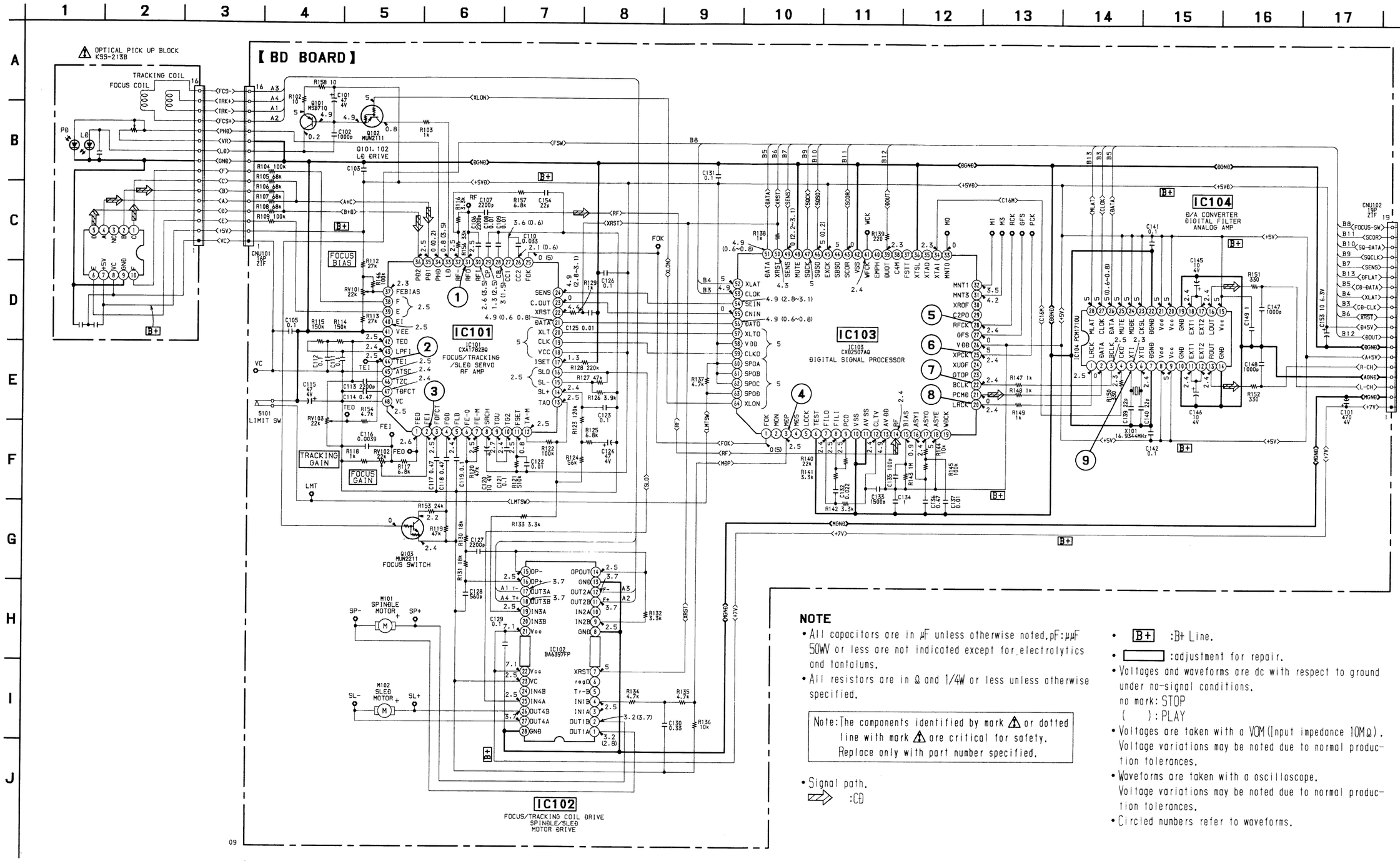
6-15. SCHEMATIC DIAGRAM — CD SECTION —

• See page 65 for IC Block Diagrams.



6-15. SCHEMATIC DIAGRAM — CD SECTION —

• See page 65 for IC Block Diagrams.



NOTE

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.

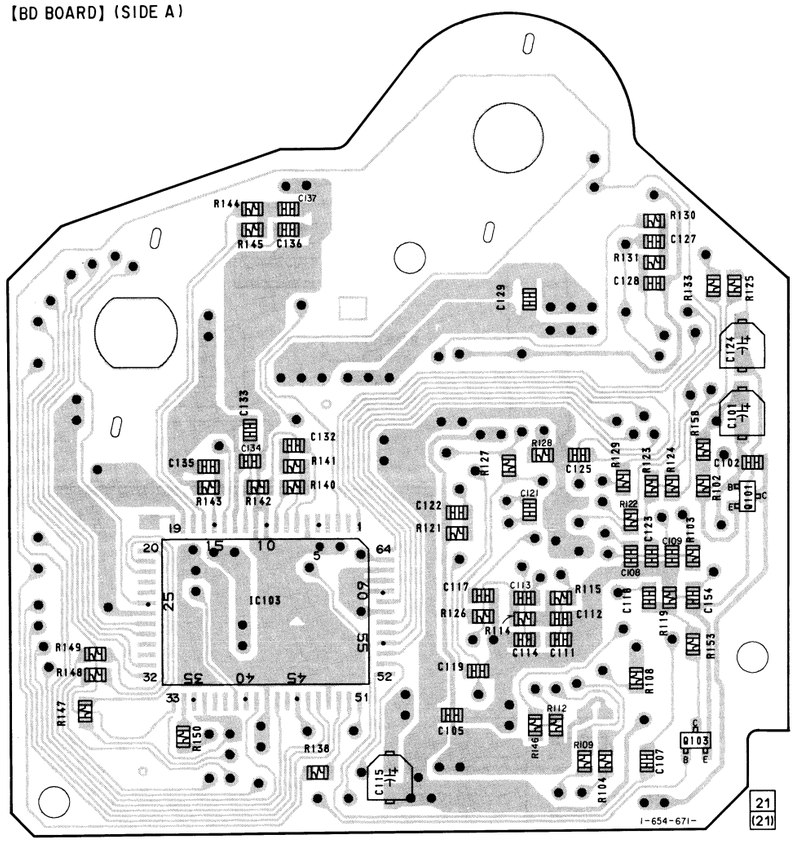
Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

- Signal path. ⇨ :CD
- B+ :B+ Line.
- ▭ :adjustment for repair.
- Voltages and waveforms are dc with respect to ground under no-signal conditions.
  no mark: STOP
  ( ): PLAY
- Voltages are taken with a VOM (Input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.

6-16. PRINTED WIRING BOARD — CD SECTION —

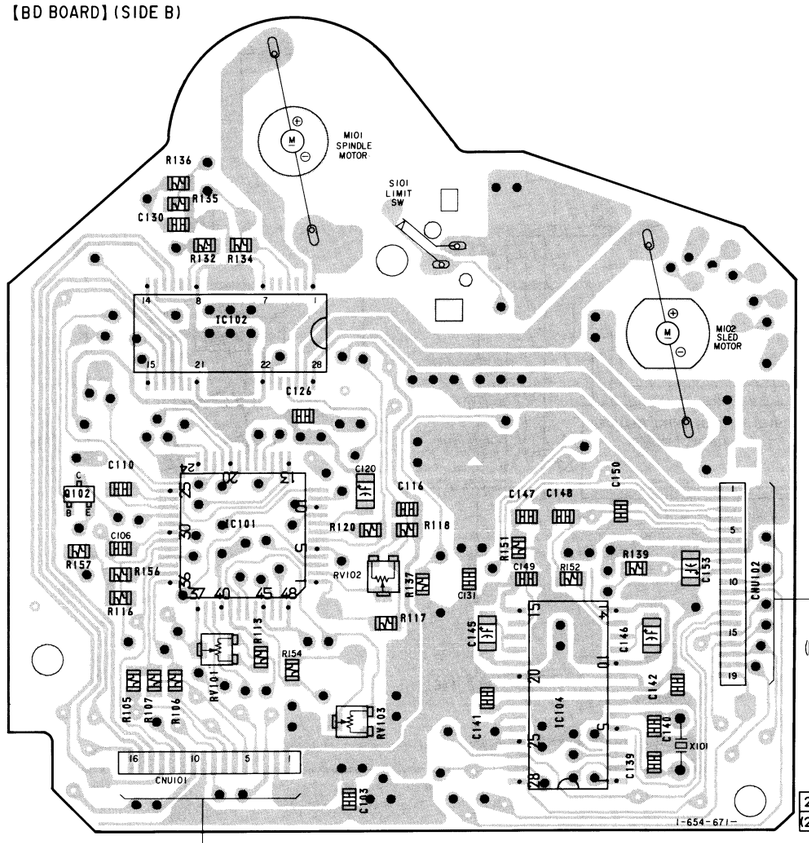
• See page 18 for Circuit Boards Location.

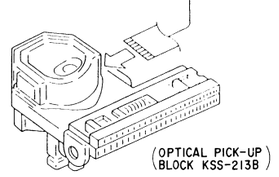
【BD BOARD】(SIDE A)



09

【BD BOARD】(SIDE B)





• **Semiconductor Location**

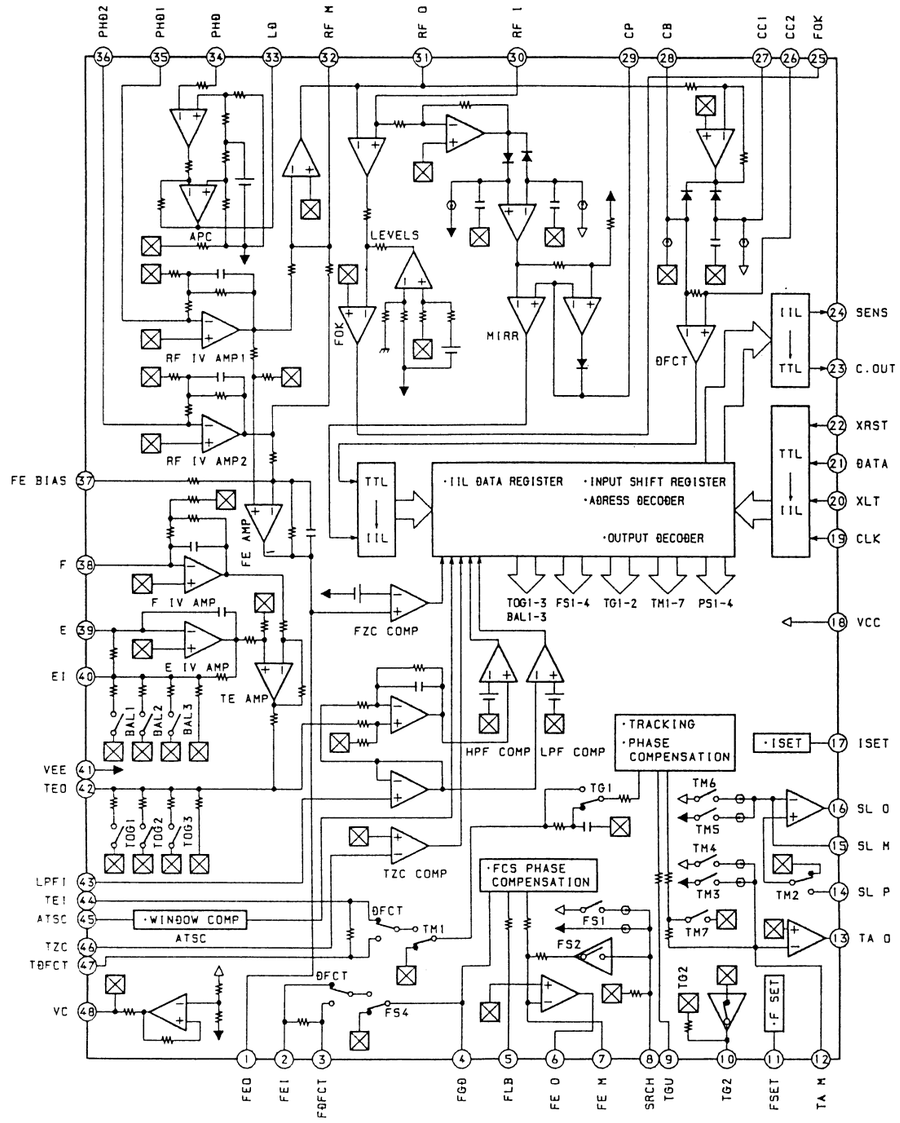
Ref. No.	Location
IC101	E-9
IC102	C-9
IC103	E-3
IC104	F-11
Q101	D-7
Q102	D-8
Q103	F-6

Note:

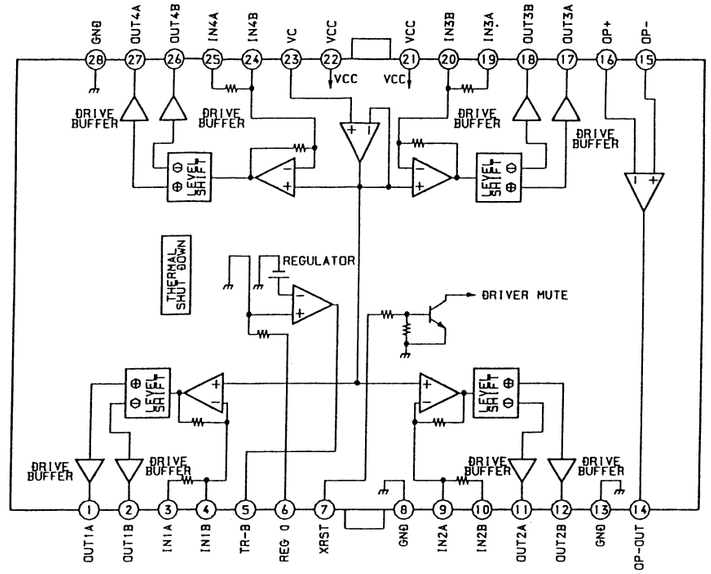
- ⟜—— : parts extracted from the component side.
- ● : Through hole.
- ▒▒ : Pattern from the side which enable seeing. (The other layer's patterns are not indicated.)

6-17. IC BLOCK DIAGRAMS — CD SECTION —

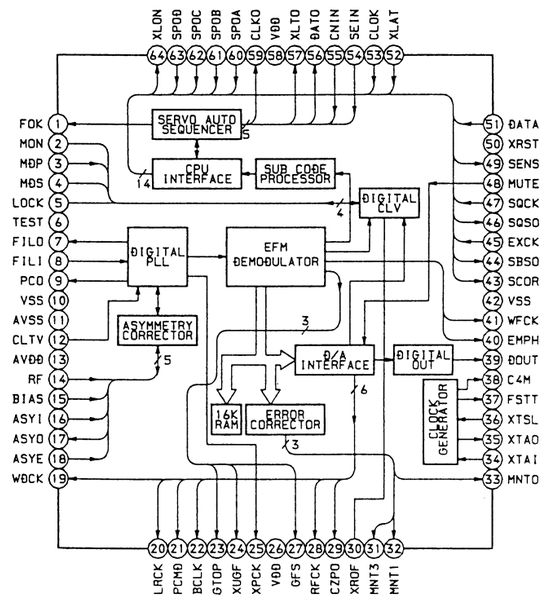
IC101 CXA1782BQ



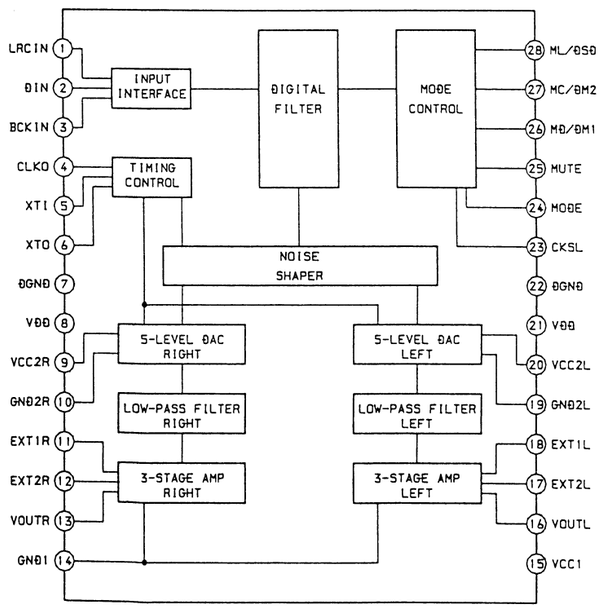
IC102 BA6397FP



IC103 CXD2507



IC104 PCM1710U



6-18. IC PIN FUNCTIONS

• IC501 GRAPHIC CONTROL (ASD042)

Pin No.	Pin Name	I/O	Function
1 to 7	GR7-1	O	Fluorescent indicator tube grid signal output.
8	V_{DD}	–	+5V
9, 10	LED9, 10	O	LED drive signal output
11	KEY SELECT	O	Not used. (Open)
12	VOL IN B	I	Volume encoder signal input.
13	REQ GM	I/O	Request signal from/to master control.
14	CLK MG	I	Serial clock input.
15	DATA GM	O	Serial data output to master control.
16	DATA MG	I	Serial data input from master control.
17	RESET	I	Reset signal input.
18	PANEL SW	I	CD door open detection input. (Not used) (Open)
19	LED SELECT	O	LED select signal output.
20	AVss	–	Ground
21 to 24	SPEANA IN1-4	I	Spectram analizer signal input. (Connected to ground)
25 to 28	KEY IN1-4	I	Key matrix input.
29	AV_{DD}	–	+5V
30	AV_{REF}	–	
31	JOG IN B	I	Jog dial encoder signal input.
32	XT2	I	Not used. (open)
33	Vss	–	Ground
34	X1	I	X'tal (5 MHz).
35	X2	O	
36 to 39	LED8-5	O	LED drive signal output. (Not used) (open)
40, 41	LED4,3	O	LED drive signal output.
42, 43	LED2,1	O	
44	VOL IN A	I	Volume encoder signal input.
45	JOG IN A	I	Jog dial encoder signal input.
46	RDY MG	I	Ready signal from master contorl.
47	SIRCS IN	I	SIRCS signal input.
48	IC (VPP)	–	Ground
49, 50	LED12, 13	O	LED drive signal output.
51	LED11	O	
52	V_{DD}	–	+5V
53 to 70	SEG22-5	O	Fluorescent indicator tube segment signal output.
71	V. LOAD	–	-25V for Fluorescent indicator tube.
72 to 75	SEG4-1	O	Fluorescent indicator tube segment signal output.
76 to 80	GR12-8	O	Fluorescent indicator tube grid signal output.

• **IC701 MASTER CONTROL (TMP87CP64YF)**

Pin No.	Pin Name	I/O	Function
1	Vss	–	Ground
2	XOUT	O	X'tal (10 MHz).
3	XIN	I	
4	$\overline{\text{RESET}}$	I	Reset signal input.
5	XOUT	O	X'tal for clock (32.768 MHz).
6	XIN	I	
7	GND (test)	–	Ground
8	$\overline{\text{AC CUT}}$	I	Back up signal input.
9	SUPER WOOFER ON	O	Not used. (Connected to ground)
10	ST-MUTE ON	O	Mute signal output for tuner.
11	$\overline{\text{180-A-PLAY}}$	I	Tape detection signal input. (Not used) (Connected to ground)
12	$\overline{\text{180-B-PLAY}}$	I	
13	$\overline{\text{180-B-REC}}$	I	
14	CLK CHK	I	Not used. (pull up)
15	UP-SW	I	Disc table up detect. (Not used) (Connected to ground)
16	IN-SW	I	Loading in detection signal input.
17	ENCODER-0	I	Disctray address detect encoder input. (Not used) (Connected to ground)
18	ENCODER-1	I	
19	ENCODER-2	I	
20	$\overline{\text{OUT SW OPEN}}$	I	Loading out detection signal input.
21	LOAD IN	O	Loading motor control signal output.
22	LOAD OUT	O	
23	TBL-L	O	Table motor control signal output. (Not used) (Open)
24	TBL-R	O	
25	SCOR	I	Sub-code sync signal input.
26	TBL-SENS	I	CD Table sensor signal input. (Not used) (Connected to ground)
27	RDS INT	I	RDS data start input. (Not used) (Connected to ground)
28	RDS DATA	I	RDS data start output. (Not used) (Connected to ground)
29	DF LAT	O	Latch signal for digital filter.
30	SENS	I	Table sence signal input.
31	$\overline{\text{XRST}}$	O	Reset signal output for CD.
32	MG-RDY	O	Ready signal to graphic control.
33	$\overline{\text{ADJ}}$	I	Test mode input.
34	$\overline{\text{GM-REQ}}$	I	Request signal from graphic control.
35	MG-CLK	O	Clock signal to graphic control.
36	GM-DATA	I	Data input from graphic control.
37	MG-DATA	O	Data output to graphic control.
38	CD-CLK	O	Clock output. Serial bus line.
39	$\overline{\text{ADJ-2}}$	I	Test mode input.
40	CD-DATA	O	Data output. Serial bus line.

Pin No.	Pin Name	I/O	Function
41	AUB IN	I	Audio bus in/output. (Not used) (Open)
42	AUB OUT	O	
43	FOCUS SW	O	Focus switching signal output.
44	SQ-CLK	O	Subcode Q data read clock output.
45	SQ-DATA	I	Subcode Q data input.
46	X-LAT	O	Latch signal digital signal processor.
47	TEST	I	Test land.
48	VAREF	I	Analog reference voltage input.
49	VAss	–	Ground
50	Vss	–	
51	V_{DD}	–	+5V
52	SPEC	I	Destination detection setting input.
53	DESTINATION	I	
54	DISC SENS	I	Not used. (Connected to ground)
55	TC RELAY	O	REC/PB select signal output.
56	A-SHUT	I	Control signal input from deck.
57	B-SHUT	I	
58	B-HALF	I	
59	A-HALF	I	
60	220-A-PLAY	I	
61	220-B-PLAY	I	
62	62427 LAT	O	PLL latch output.
63	K-CON-LAT	O	Not used. (Open)
64	VOL LAT (AV)	O	Latch signal for electrical volume. (Not used) (Open)
65	REAR SP RELAY B	O	Not used. (Open)
66	FRONT SP RELAY C	O	
67	$\overline{\text{POWER ON}}$	O	Power on signal output.
68	CD POWER	O	CD power control signal output.
69	$\overline{\text{PROLOG LAT}}$	O	Not used. (Open)
70	$\overline{\text{MUTE}}$	O	Mute signal for AMP.
71	COM CLK	O	PLL clock output.
72	COM DIN	I	PLL data input.
73	COM DATA	O	PLL data output.
74	$\overline{\text{K CON ON}}$	O	Not used. (Open)
75	LIDDED LED	O	Disc No. LED drive signal output. (Not used) (Open)
76	$\overline{\text{PROLOG ON}}$	O	PRO LOGIC control output. (Not used) (Open)
77	DBFB-HIGH	O	DBFB switching signal output.
78	$\overline{\text{URG STB STDBY}}$	I	Not used. (Pull-down)
79	$\overline{\text{URG STB ON}}$	O	Not used (Open)
80	$\overline{\text{TC A}}$	O	Deck A, B select output.

Pin No.	Pin Name	I/O	Function
81	$\overline{\text{NORM}}$	O	NORMAL/HIGH control signal output.
82	$\overline{\text{BIAS OFF}}$	O	Bias oscillation output.
83	$\overline{\text{REC MUTE}}$	O	Mute output.
84	$\overline{\text{NR OFF}}$	O	Dolby ON/OFF signal output.
85	PB	O	REC/PB control signal output.
86	$\overline{\text{PASS. AMP/DOLBY}}$	O	Dolby switching signal output.
87	$\overline{\text{LINE MUTE ON}}$	O	Mute signal output for deck.
88	$\overline{\text{CAP. M-HIGH}}$	O	Capstan motor control signal output.
89	A-TRG	O	Trigger motor control signal output.
90	B-TRG	O	
91	$\overline{\text{TRG LOW}}$	O	Trigger motor high/low contorol signal output.
92	$\overline{\text{CAP M ON}}$	O	Capstan motor ON/OFF control signal output.
93	$\overline{\text{STEREO}}$	I	Stereo dection signal from tuner.
94	$\overline{\text{TUNED}}$	I	Tuned detection signal from tuner.
95	ST-CE	O	Latch signal output for tuner.
96	$\overline{\text{DELAY SEL MIC}}$	O	Not used. (Connected to ground)
97	$\overline{\text{DELAY ON}}$	O	
98	DELAY LEVEL A	O	
99	DELAY LEVEL B	O	
100	V_{DD}	–	+5V

SECTION 7
EXPLODED VIEWS

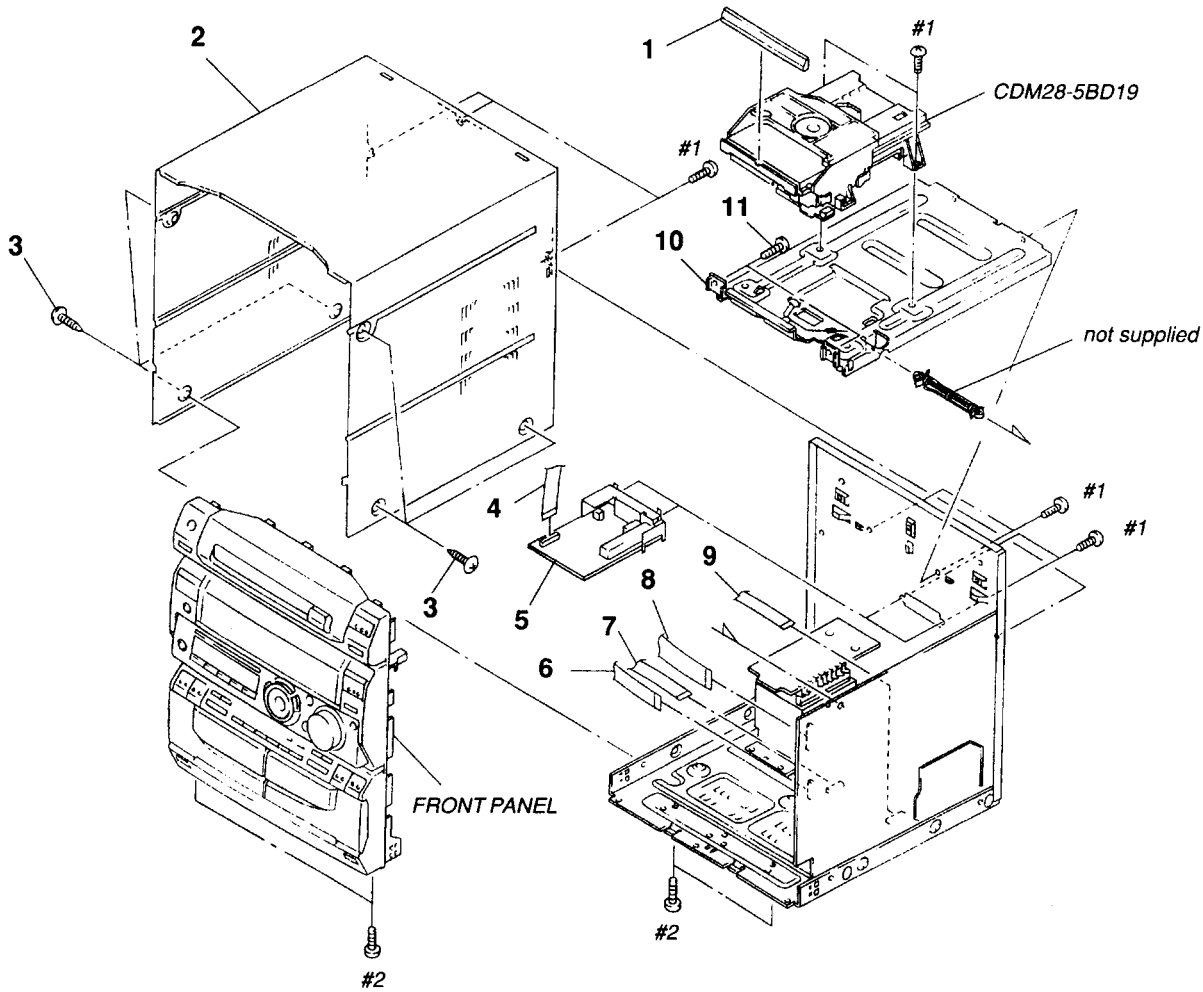
NOTE:

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.

- Abbreviation
  G: German model
  IT: Italian model
  EE: East European model
  EA: Saudi Arabia model
  HK: Hong Kong model
  SP: Singapore model
  MY: Malaysia model
  TW: Taiwan model
  JE: Tourist model
  TH: Thailand model
  IA: Indonesian model

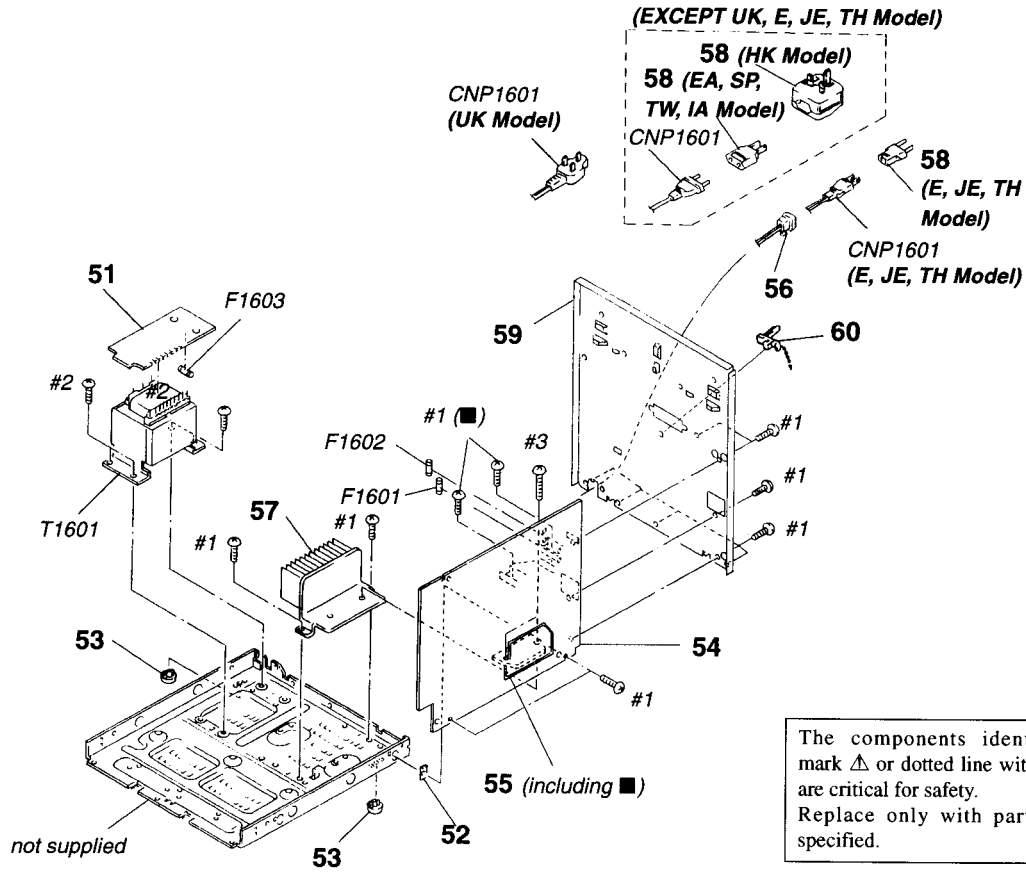
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

7-1. CASE SECTION



Ref. No.	Part No.	Description	Remark
1	4-978-836-01	PANEL, LOADING	
2	4-978-748-21	CASE (EXCEPT IA)	
2	4-983-000-01	CASE (IA)	
3	3-363-099-01	SCREW (CASE 3 TP2)	
4	1-751-086-11	WIRE (FLAT TYPE)(13 CORE)(TH)	
4	1-773-012-11	WIRE (FLAT TYPE)(15 CORE)(EXCEPT TH)	
* 5	A-4303-506-A	TCB BOARD (IA)	
* 5	A-4303-514-A	TCB BOARD (AEP,UK)	
* 5	A-4303-515-A	TCB BOARD (G,IT)	
* 5	A-4303-516-A	TCB BOARD (EE)	
* 5	A-4303-518-A	TCB BOARD (E,EA,HK,MY,SP,TW)	
* 5	A-4303-520-A	TCB BOARD (JE)	
* 5	A-4303-537-A	TCB BOARD (TH)	
6	1-769-946-11	WIRE (FLAT TYPE)(11 CORE)	
7	1-769-940-11	WIRE (FLAT TYPE)(11 CORE)	
8	1-773-158-11	WIRE (FLAT TYPE)(21 CORE)	
9	1-776-166-11	WIRE (FLAT TYPE)(19 CORE)	
* 10	4-978-853-01	CHASSIS, CDM	
* 11	4-951-620-01	SCREW (2.6X8), +BVTP	

7-2. BACK PANEL SECTION

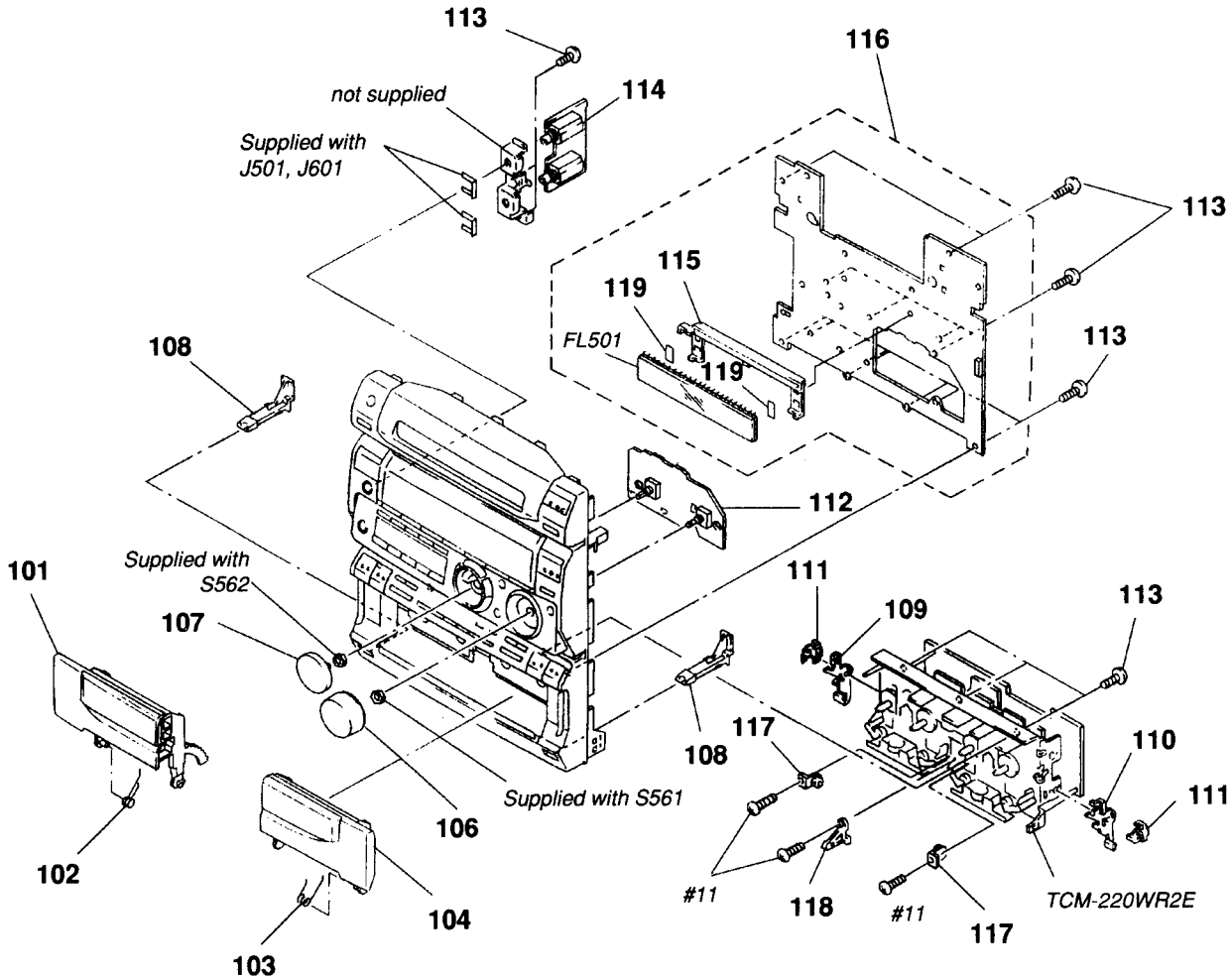


The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
* 51	1-659-332-11	TRANSFORMER BOARD	
52	1-537-770-21	TERMINAL BOARD, GROUND	
53	4-965-822-01	FOOT	
* 54	A-4389-425-A	MAIN BOARD, COMPLETE (AEP,UK)	
* 54	A-4389-426-A	MAIN BOARD, COMPLETE (G,IT)	
* 54	A-4389-427-A	MAIN BOARD, COMPLETE (EE)	
* 54	A-4389-428-A	MAIN BOARD, COMPLETE (E,EA,HK,MY,SP,TW)	
* 54	A-4389-429-A	MAIN BOARD, COMPLETE (JE)	
* 54	A-4390-120-A	MAIN BOARD, COMPLETE (TH)	
* 54	A-4390-506-A	MAIN BOARD, COMPLETE (IA)	
* 55	A-4389-444-A	POWER AMP BOARD, COMPLETE (AEP,UK,G,IT,EE)	
* 55	A-4389-445-A	POWER AMP BOARD, COMPLETE (E,JE,EA,HK,MY,SP,TW,IA)	
* 55	A-4390-127-A	POWER AMP BOARD, COMPLETE (TH)	
* 55	A-4390-513-A	POWER AMP BOARD, COMPLETE (IA)	
* 56	3-703-244-00	BUSHING (2104), CORD (EXCEPT E,JE,TH,IA)	
56	3-703-571-11	BUSHING (S)(4516), CORD (E,JE,TH)	
56	4-966-266-01	BUSHING (S)(FBS002), CORD (IA)	
* 57	4-979-520-01	HEAT SINK	
⚠58	1-569-007-11	ADAPTER, CONVERSION 2P (E,JE)	
⚠58	1-569-008-11	ADAPTER, CONVERSION 2P (EA,SP,TW,IA)	
⚠58	1-770-019-11	ADAPTOR, CONVERSION PLUG 3P (HK)	
* 59	4-979-273-01	PANEL, BACK (AEP)	

Ref. No.	Part No.	Description	Remark
* 59	4-979-273-11	PANEL, BACK (UK)	
* 59	4-979-273-21	PANEL, BACK (G)	
* 59	4-979-273-31	PANEL, BACK (IT)	
* 59	4-979-273-41	PANEL, BACK (EE)	
* 59	4-979-274-01	PANEL, BACK (E)	
* 59	4-979-274-11	PANEL, BACK (EA,TW)	
* 59	4-979-274-21	PANEL, BACK (MY)	
* 59	4-979-274-31	PANEL, BACK (SP)	
* 59	4-979-274-41	PANEL, BACK (HK)	
* 59	4-979-274-51	PANEL, BACK (JE)	
* 59	4-979-274-61	PANEL, BACK (IA)	
* 59	4-979-274-71	PANEL, BACK (TH)	
60	4-956-370-12	BAND, PLUG FIXED (UK, HK)	
⚠CNP1601	1-575-651-11	CORD, POWER (EXCEPT UK,E,JE,TH)	
⚠CNP1601	1-575-653-11	CORD, POWER (E,JE)	
⚠CNP1601	1-751-326-31	CORD, POWER (TH)	
⚠CNP1601	1-751-520-21	CORD, POWER (UK)	
⚠F1601	1-532-504-31	FUSE, TIME LAG (4.0A 250V)	
⚠F1602	1-532-504-31	FUSE, TIME LAG (4.0A 250V)	
⚠F1603	1-532-503-31	FUSE, TIME LAG (1.6A 250V) (E,JE,EA,HK,SP,TW,IA)	
⚠T1601	1-429-438-11	TRANSFORMER, POWER (AEP,UK,G,IT,EE)	
⚠T1601	1-429-465-11	TRANSFORMER, POWER (E,JE,EA,HK,MY,SP,TW,IA,TH)	

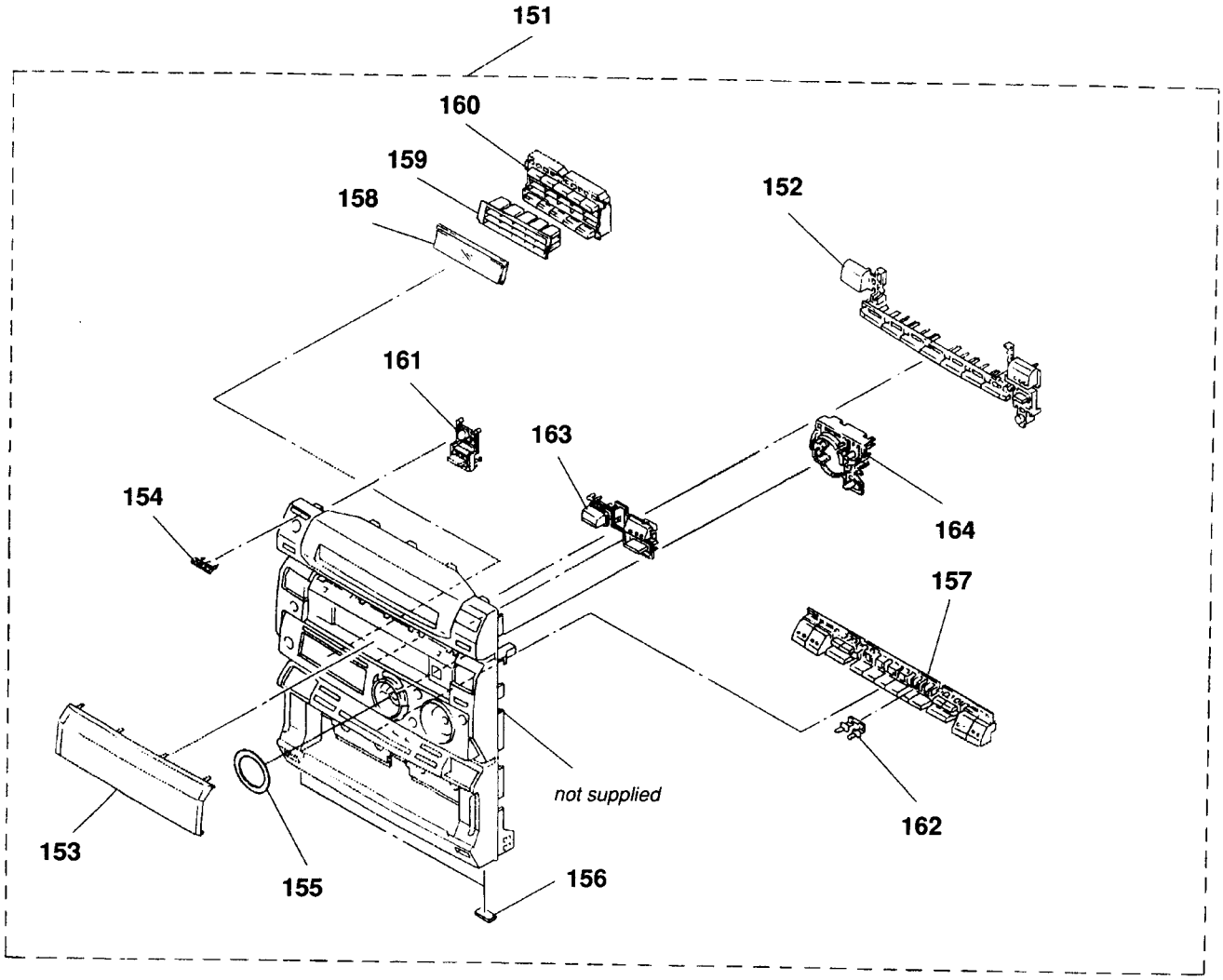
7-3. FRONT PANEL SECTION 1



Ref. No.	Part No.	Description	Remark
101	X-4946-727-1	HOLDER (A) ASSY, CASSETTE (EXCEPT IA)	
101	X-4947-193-1	HOLDER (A) ASSY, CASSETTE (IA)	
102	4-959-231-11	SPRING (L), TORSION	
103	4-959-232-11	SPRING (R), TORSION	
104	X-4946-728-1	HOLDER (B) ASSY, CASSETTE (EXCEPT IA)	
104	X-4947-194-1	HOLDER (B) ASSY, CASSETTE (IA)	
106	4-978-733-01	KNOB, VOL (EXCEPT IA)	
106	4-978-733-11	KNOB, VOL (IA)	
107	4-978-732-01	KNOB, JOG (EXCEPT IA)	
107	4-978-732-11	KNOB, JOG (IA)	
108	4-980-219-01	BUTTON (EJECT)(E5)	
* 109	3-354-953-01	LEVER (LOCK LEVER L)	
* 110	3-354-954-01	LEVER (LOCK LEVER R)	
111	3-354-957-01	JOINT (LOCK LEVER)	

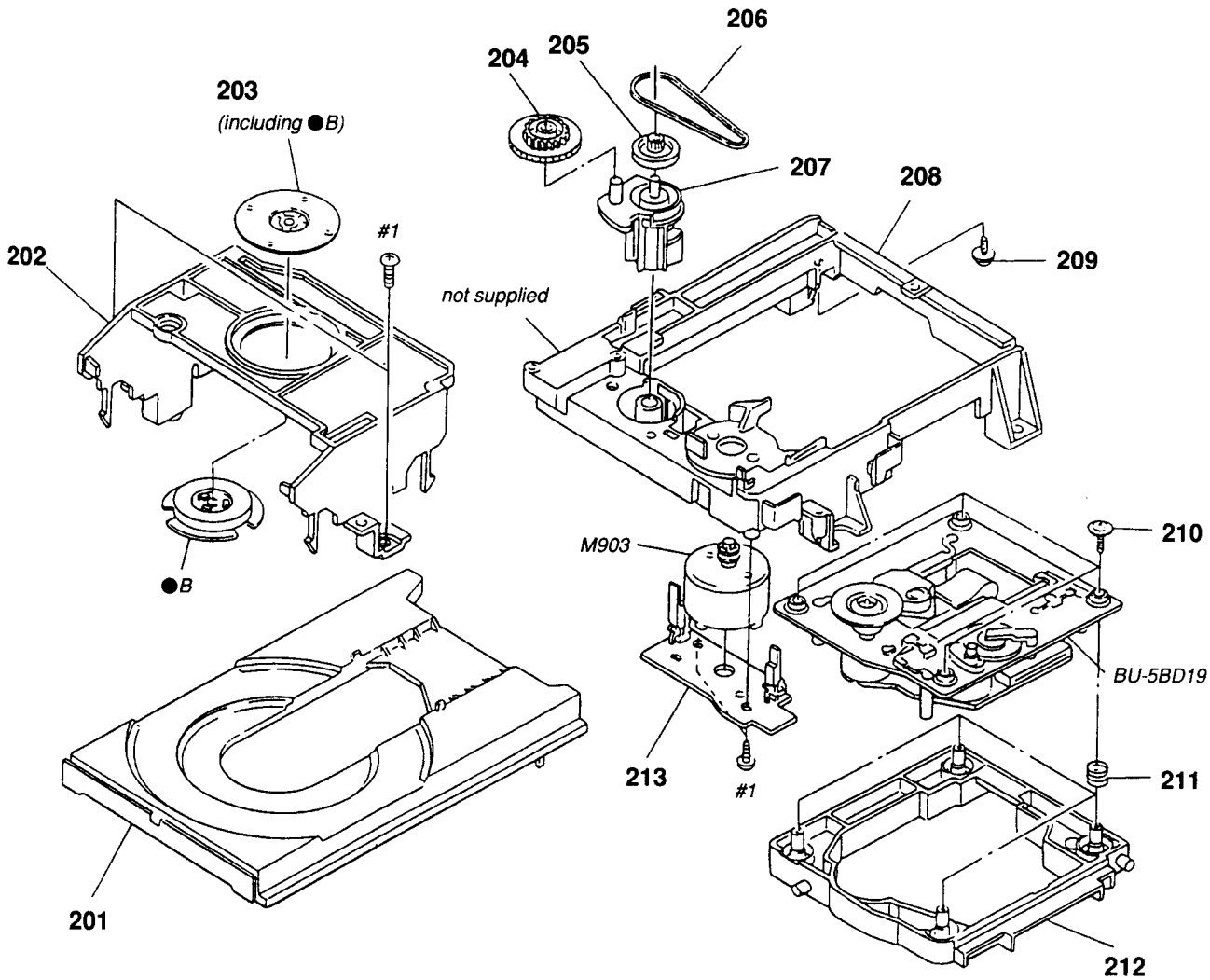
Ref. No.	Part No.	Description	Remark
* 112	1-659-333-11	JOG BOARD	
113	4-951-620-01	SCREW (2.6X8), +BVTP	
* 114	1-659-331-11	HP BOARD	
* 115	4-978-168-01	HOLDER, FL TUBE	
* 116	A-4389-446-A	PANEL BOARD, COMPLETE (AEP,UK,G,IT,EE)	
* 116	A-4389-447-A	PANEL BOARD, COMPLETE	(E,JE,EA,HK,MY,SP,TW)
* 116	A-4390-128-A	PANEL BOARD, COMPLETE (TH)	
* 116	A-4390-514-A	PANEL BOARD, COMPLETE (IA)	
117	3-354-963-01	DAMPER	
* 118	4-980-439-01	FULCRUM, HOLDER	
* 119	4-932-810-11	CUSHION (FL)	
FL501	1-517-489-11	INDICATOR TUBE, FLUORESCENT	

7-4. FRONT PANEL SECTION 2



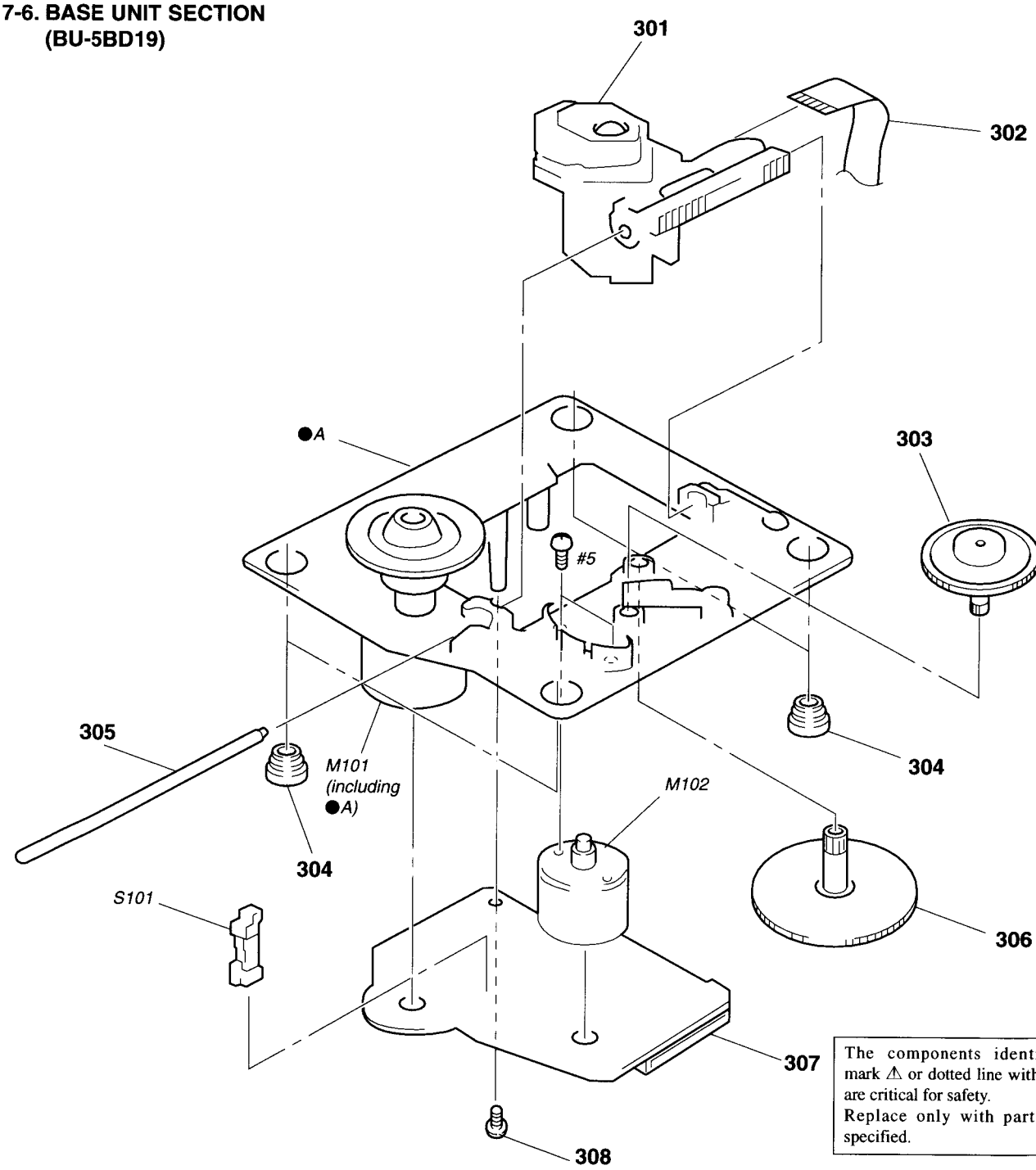
Ref. No.	Part No.	Description	Remark
151	X-4946-712-1	PANEL ASSY, FRONT (AEP,UK,G,IT,EE)	
151	X-4946-714-1	PANEL ASSY, FRONT (E,JE,EA,HK,MY,SP,TW,TH)	
151	X-4947-189-1	PANEL ASSY, FRONT (IA)	
152	X-4946-706-1	BUTTON (T/B) ASSY	
153	4-978-716-01	WINDOW, FL	
154	4-962-708-11	EMBLEM (4-A), SONY	
155	4-978-745-11	PLATE, ORNAMENTAL, JOG	
156	4-930-336-61	FOOT (FELT)	
157	X-4946-707-1	BUTTON (TC-PLAY) ASSY	
158	4-978-744-31	PLATE, ORNAMENTAL, MULTI	
159	4-978-742-01	HOLDER, MULTI LED	
160	4-978-839-01	BUTTON, MULTI	
161	4-978-837-01	BUTTON, POWER	
162	4-978-851-01	INDICATOR, REC	
163	X-4946-713-1	BUTTON (CD-PLAY) ASSY	
164	X-4946-801-1	BUTTON (ENTER/NEXT)(E5) ASSY	

7-5. CD MECHANISM SECTION (CDM28-5BD19)



Ref. No.	Part No.	Description	Remark
201	4-960-836-01	TABLE, DISC	
202	4-960-835-01	HOLDER (M)	
203	1-452-719-11	MAGNET ASSY	
204	4-960-842-01	GEAR (P)	
205	4-960-841-01	PULLEY (S)	
206	4-927-649-01	BELT	
* 207	4-960-839-01	CAM	
208	4-960-838-03	BASE (MD)	
209	4-917-583-21	BRACKET, YOKE	
210	4-933-134-01	SCREW (+PTPWH M2.6X6)	
211	4-959-996-01	SPRING (932), COMPRESSION	
212	4-960-834-01	HOLDER (BU)	
* 213	1-650-836-11	LOADING BOARD	
M903	A-4604-363-A	MOTOR (L) ASSY (LOADING)	

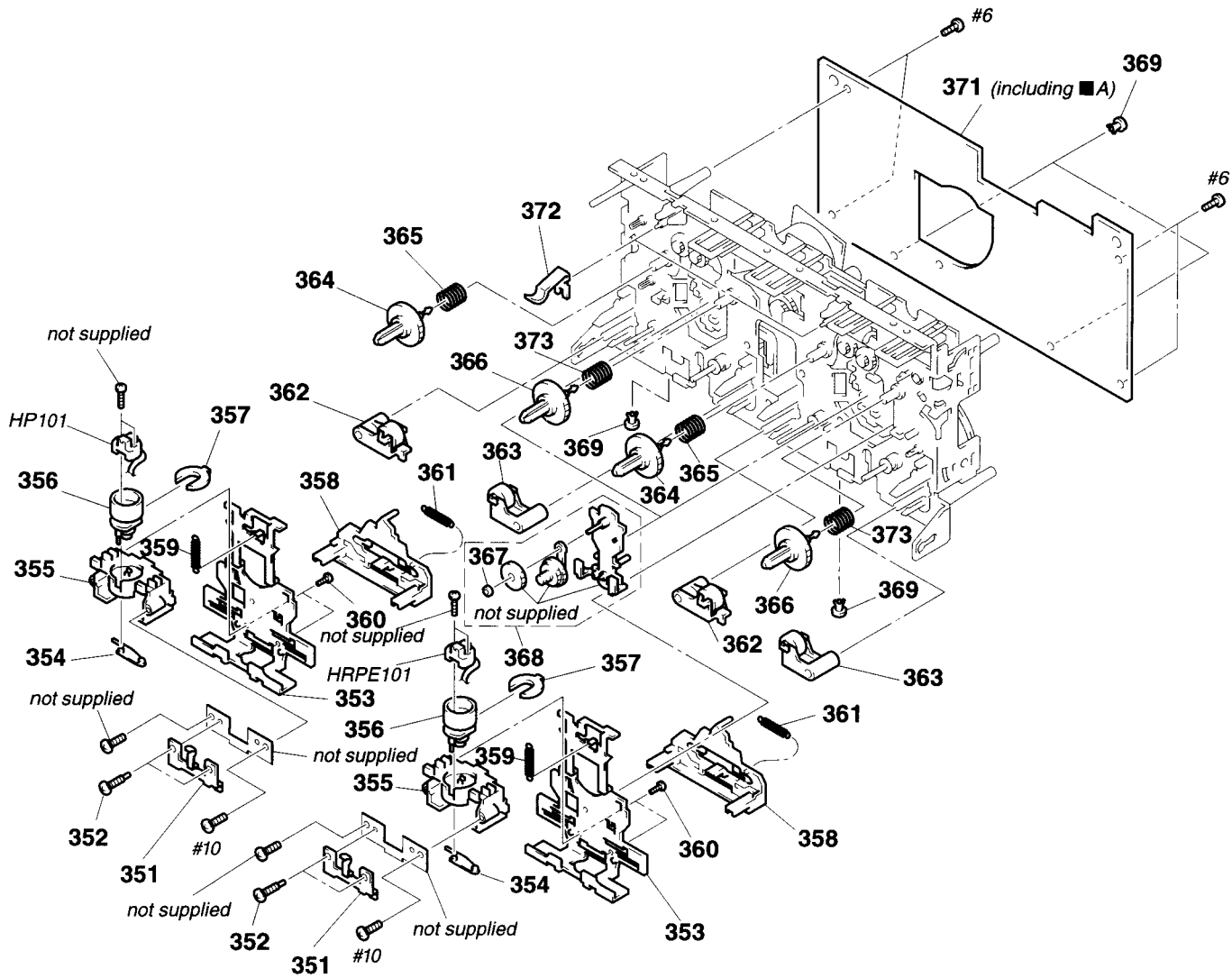
7-6. BASE UNIT SECTION (BU-5BD19)



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
⚠301	8-848-367-11	OPTICAL PICK-UP KSS-213BA/F-NP	
302	1-769-069-11	WIRE (FLAT TYPE)(16 CORE)	
303	4-917-567-01	GEAR (M)	
304	4-951-940-01	INSULATOR (BU)	
305	4-917-565-01	SHAFT, SLED	
306	4-917-564-01	GEAR (P), FLATNESS	
* 307	A-4673-402-A	BD BOARD, COMPLETE	
308	4-951-620-01	SCREW (2.6X8), +BVTP	
M101	X-4917-523-4	MOTOR ASSY (SPINDLE)	
M102	X-4917-504-1	MOTOR ASSY (SLED)	
S101	1-572-085-11	SWITCH, LEAF (LIMIT)	

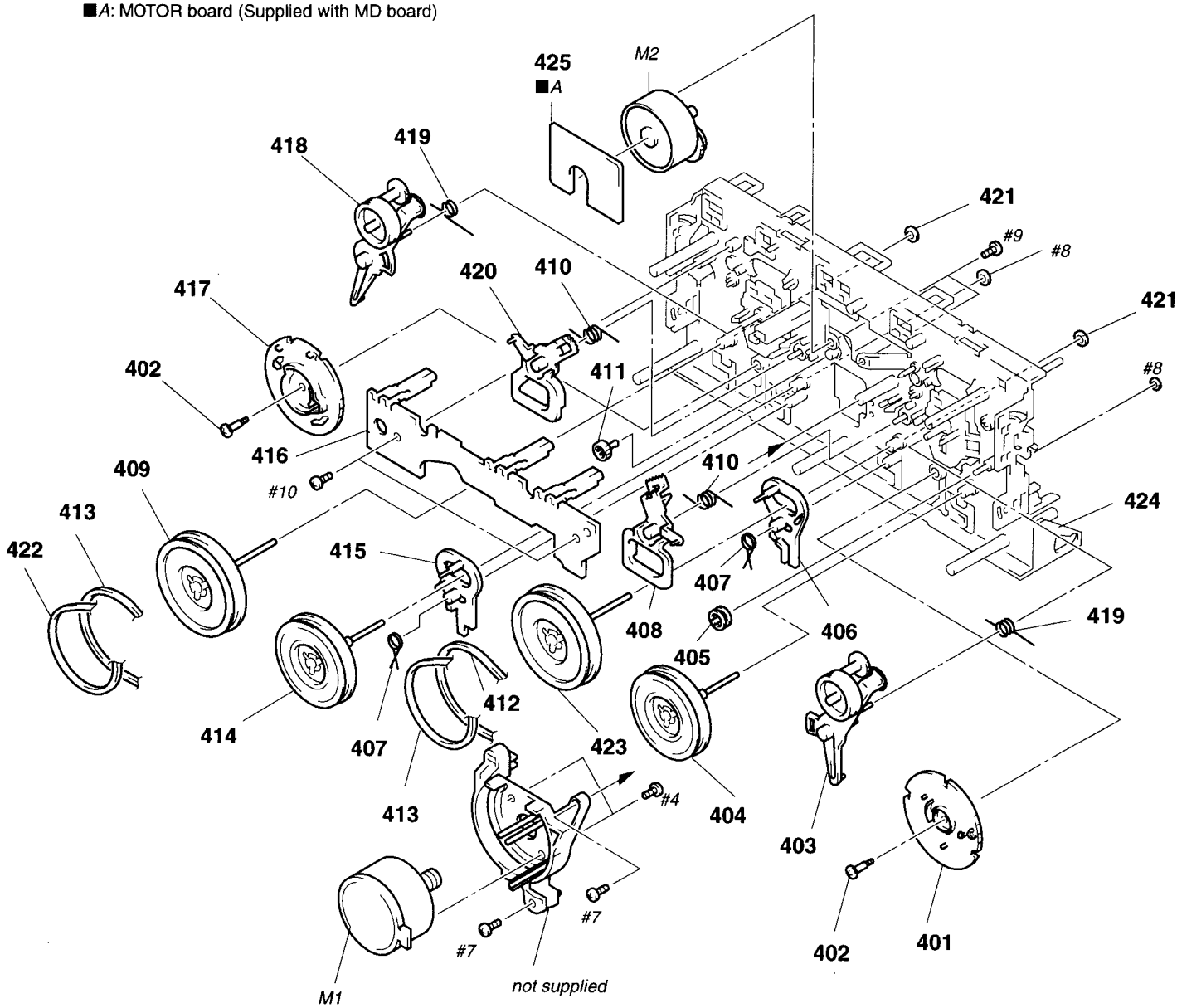
7-7. TC MECHANISM SECTION 1 (TCM-220WR2E)



Ref. No.	Part No.	Description	Remark
351	3-908-560-01	SPRING, AZIMUTH ADJUSTMENT	
352	3-919-684-01	SCREW, AZIMUTH ADJUSTMENT	
* 353	X-3367-584-2	SLIDER (HEAD) ASSY	
354	3-908-556-01	SPRING, HEAD TOGGLE	
355	3-908-558-02	FITTING BLOCK, HEAD	
356	3-908-557-02	ROTARY BLOCK, HEAD	
* 357	3-908-559-01	STOPPER, AZIMUTH	
358	3-908-555-01	SLIDER (REV SLIDER)	
359	3-917-143-11	SPRING, TENSION	
360	3-388-848-01	SCREW (P2X6)(B TIGHT)	
361	3-911-113-01	SPRING, TENSION	
362	X-3370-643-1	PINCH LEVER (REV) ASSY	
363	X-3367-588-1	PINCH LEVER (FWD) ASSY	
364	3-908-613-01	GEAR (S), REEL	
365	3-917-141-01	SPRING, COMPRESSION	
366	X-3371-305-1	REEL (T) ASSY	
367	3-669-465-01	WASHER (1.5), STOPPER	
368	X-3370-173-1	TU ASSY	
369	3-911-116-21	RIVET, PUSH	
* 371	A-2007-435-A	MD BOARD, COMPLETE	
372	3-930-972-01	DETENT, HALF	
373	3-917-142-01	SPRING, COMPRESSION	
HP101	1-500-093-11	HEAD, MAGNETIC (PLAYBACK)	
HRPE101	1-500-094-11	HEAD, MAGNETIC (REC/PB/ERASE)	

7-8. TC MECHANISM SECTION 2 (TCM-220WR2E)

■*A*: MOTOR board (Supplied with MD board)



Ref. No.	Part No.	Description	Remark
401	3-908-597-01	CAM (A)	
402	3-908-608-11	SCREW, STEP	
403	X-3367-590-2	ARM (A) ASSY, FR	
404	X-3370-169-1	FLYWHEEL (AR) ASSY	
405	3-928-047-01	PULLEY, TENSION	
406	3-908-599-01	LEVER (REV-A)	
407	3-908-601-01	SPRING (REV LEVER), TORSION	
408	3-908-603-01	LEVER (TRIGGER A)	
409	X-3370-170-1	FLYWHEEL (BF) ASSY	
410	3-908-605-01	SPRING (TRIGGER), TORSION	
411	3-908-609-01	GEAR, TRIGGER	
412	3-913-845-11	BELT (A)	
413	3-913-846-11	BELT (FR)	
414	X-3370-171-1	FLYWHEEL (BR) ASSY	
415	3-908-600-01	LEVER (REV-B)	
* 416	1-650-669-11	LEAF SWITCH BOARD	
417	3-908-598-01	CAM (B)	
418	X-3369-849-2	ARM (B) ASSY, FR	
419	3-914-111-01	SPRING (FR), TORSION	
420	3-908-604-01	LEVER (TRIGGER B)	
421	3-911-115-01	WASHER, STOPPER	
422	3-917-176-11	BELT (B)	
423	X-3370-172-1	FLYWHEEL (AF) ASSY	
424	X-3371-441-1	CHASSIS ASSY, MECHANICAL	
* 425	A-2007-435-A	MD BOARD, COMPLETE	
M1	X-3371-223-1	MOTOR ASSY (CAPSTAN)	
M2	A-2004-410-A	MOTOR ASSY (TRIGGER)	

SECTION 8
ELECTRICAL PARTS LIST

BD

Note:

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- RESISTORS
  All resistors are in ohms
  METAL: Metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F : nonflammable
- SEMICONDUCTORS
  In each case, u: μ , for example:
  uA...: μ A..., uPA...: μ PA..., uPB...: μ PB..., uPC...: μ PC..., uPD...: μ PD...
- CAPACITORS
  uF : μ F
- COILS
  uH : μ H
- Abbreviation
  G: German model
  IT: Italian model
  EE: East European model
  EA: Saudi Arabia model
  HK: Hong Kong model
  SP: Singapore model
  MY: Malaysia model
  TW: Taiwan model
  JE: Tourist model
  TH: Thailand model
  IA: Indonesian model

Ref. No.	Part No.	Description			Remark
*	A-4673-402-A	BD BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C101	1-126-607-11	ELECT CHIP	47uF	20%	4V
C102	1-163-275-11	CERAMIC CHIP	0.001uF	5%	50V
C103	1-164-346-11	CERAMIC CHIP	1uF		16V
C105	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C106	1-164-695-11	CERAMIC CHIP	0.0022uF	5%	50V
C107	1-164-695-11	CERAMIC CHIP	0.0022uF	5%	50V
C108	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C109	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C110	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V
C111	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C112	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C113	1-164-695-11	CERAMIC CHIP	0.0022uF	5%	50V
C114	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C115	1-126-607-11	ELECT CHIP	47uF	20%	4V
C116	1-163-016-00	CERAMIC CHIP	0.0039uF	10%	50V
C117	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C118	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C119	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C120	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C121	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C122	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C123	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C124	1-126-607-11	ELECT CHIP	47uF	20%	4V
C125	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C126	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C127	1-164-695-11	CERAMIC CHIP	0.0022uF	5%	50V
C128	1-163-135-00	CERAMIC CHIP	560PF	5%	50V
C129	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C130	1-164-336-11	CERAMIC CHIP	0.33uF		25V
C131	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C132	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C133	1-163-145-00	CERAMIC CHIP	0.0015uF	5%	50V
C134	1-164-346-11	CERAMIC CHIP	1uF		16V
C135	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C136	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C137	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C139	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C140	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C141	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C142	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C145	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C146	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C147	1-163-275-11	CERAMIC CHIP	0.001uF	5%	50V
C148	1-163-275-11	CERAMIC CHIP	0.001uF	5%	50V
C149	1-164-346-11	CERAMIC CHIP	1uF		16V
C153	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C154	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
		< CONNECTOR >			
CNU101	1-770-014-11	CONNECTOR, FFC/FPC 16P			
CNU102	1-770-013-11	CONNECTOR, FFC/FPC 19P			
		< IC >			
IC101	8-752-069-56	IC CXA1782BQ			
IC102	8-759-291-06	IC BA6397FP			
IC103	8-752-372-94	IC CXD2507AQ			
IC104	8-759-185-29	IC PCM1710U-B			
		< TRANSISTOR >			
Q101	8-729-010-08	TRANSISTOR MSB710-R			
Q102	8-729-424-08	TRANSISTOR UN2111			
Q103	8-729-421-22	TRANSISTOR UN2211			
		< RESISTOR >			
R102	1-216-001-00	METAL CHIP	10	5%	1/10W
R103	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R104	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R105	1-216-093-00	METAL CHIP	68K	5%	1/10W
R106	1-216-093-00	METAL CHIP	68K	5%	1/10W
R107	1-216-093-00	METAL CHIP	68K	5%	1/10W
R108	1-216-093-00	METAL CHIP	68K	5%	1/10W
R109	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R112	1-216-083-00	METAL CHIP	27K	5%	1/10W
R113	1-216-083-00	METAL CHIP	27K	5%	1/10W

BD **HP**

Ref. No.	Part No.	Description			Remark
R114	1-216-101-00	METAL CHIP	150K	5%	1/10W
R115	1-216-101-00	METAL CHIP	150K	5%	1/10W
R116	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R117	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R118	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R119	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R120	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R121	1-216-114-00	METAL GLAZE	510K	5%	1/10W
R122	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R123	1-216-099-00	METAL CHIP	120K	5%	1/10W
R124	1-216-091-00	METAL CHIP	56K	5%	1/10W
R125	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R126	1-216-063-91	METAL GLAZE	3.9K	5%	1/10W
R127	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R128	1-216-105-91	METAL GLAZE	220K	5%	1/10W
R129	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R130	1-216-079-00	METAL CHIP	18K	5%	1/10W
R131	1-216-079-00	METAL CHIP	18K	5%	1/10W
R132	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R133	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R134	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R135	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R136	1-216-073-00	METAL CHIP	10K	5%	1/10W
R137	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R138	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R139	1-216-033-00	METAL CHIP	220	5%	1/10W
R140	1-216-081-00	METAL CHIP	22K	5%	1/10W
R141	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R142	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R143	1-216-121-91	METAL GLAZE	1M	5%	1/10W
R144	1-216-073-00	METAL CHIP	10K	5%	1/10W
R145	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R146	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R147	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R148	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R149	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R150	1-216-037-00	METAL CHIP	330	5%	1/10W
R151	1-216-037-00	METAL CHIP	330	5%	1/10W
R152	1-216-037-00	METAL CHIP	330	5%	1/10W
R153	1-216-082-00	METAL GLAZE	24K	5%	1/10W
R154	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R156	1-216-085-00	METAL CHIP	33K	5%	1/10W
R157	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R158	1-216-001-00	METAL CHIP	10	5%	1/10W
		< VARIABLE RESISTOR >			
RV101	1-241-396-11	RES, ADJ, METAL GLAZE 22K			
RV102	1-241-396-11	RES, ADJ, METAL GLAZE 22K			
RV103	1-241-396-11	RES, ADJ, METAL GLAZE 22K			

Ref. No.	Part No.	Description			Remark
		< SWITCH >			
S101	1-572-085-11	SWITCH, LEAF (LIMIT)			
		< VIBRATOR >			
X101	1-579-280-11	VIBRATOR, CRYSTAL (16.9344MHz)			
**********					
*	1-659-331-11	HP BOARD ********			
		< CAPACITOR >			
C520	1-162-306-11	CERAMIC	0.01uF	30%	16V
C521	1-162-306-11	CERAMIC	0.01uF	30%	16V
C640	1-162-306-11	CERAMIC	0.01uF	30%	16V
C641	1-124-257-00	ELECT	2.2uF	20%	50V
C642	1-162-294-31	CERAMIC	0.001uF	10%	50V
C643	1-162-282-31	CERAMIC	100PF	10%	50V
C644	1-162-290-31	CERAMIC	470PF	10%	50V
C645	1-124-465-00	ELECT	0.47uF	20%	50V
C646	1-162-282-31	CERAMIC	100PF	10%	50V
C647	1-162-282-31	CERAMIC	100PF	10%	50V
C648	1-124-257-00	ELECT	2.2uF	20%	50V
C649	1-124-589-11	ELECT	47uF	20%	16V
C650	1-124-589-11	ELECT	47uF	20%	16V
C651	1-162-306-11	CERAMIC	0.01uF	30%	16V
C652	1-162-306-11	CERAMIC	0.01uF	30%	16V
		< CONNECTOR >			
* CN513	1-568-935-11	PIN, CONNECTOR 8P			
		< IC >			
IC601	8-759-634-51	IC M5218AP			
		< JACK >			
J501	1-770-226-11	JACK (LARGE TYPE)(PHONES)			
J601	1-770-226-11	JACK (LARGE TYPE)(MIX MIC)			
		< RESISTOR >			
R640	1-249-429-11	CARBON	10K	5%	1/4W
R641	1-249-441-11	CARBON	100K	5%	1/4W
R642	1-249-417-11	CARBON	1K	5%	1/4W F
R643	1-249-417-11	CARBON	1K	5%	1/4W F
R644	1-249-435-11	CARBON	33K	5%	1/4W
R645	1-249-429-11	CARBON	10K	5%	1/4W
R646	1-247-881-00	CARBON	120K	5%	1/4W
R647	1-247-807-31	CARBON	100	5%	1/4W
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Ref. No.	Part No.	Description				Remark
*	1-659-333-11	JOG BOARD				
		*********				
		< CAPACITOR >				
C524	1-162-306-11	CERAMIC	0.01uF	30%	16V	
C525	1-162-306-11	CERAMIC	0.01uF	30%	16V	
C526	1-162-306-11	CERAMIC	0.01uF	30%	16V	
C527	1-162-306-11	CERAMIC	0.01uF	30%	16V	
		< DIODE >				
D582	8-719-812-44	DIODE TLO124 (ENTER/NEXT)				
		< RESISTOR >				
R511	1-249-409-11	CARBON	220	5%	1/4W	F
R512	1-249-411-11	CARBON	330	5%	1/4W	
R513	1-249-413-11	CARBON	470	5%	1/4W	F
R514	1-249-415-11	CARBON	680	5%	1/4W	F
R560	1-249-417-11	CARBON	1K	5%	1/4W	F
R582	1-249-407-11	CARBON	150	5%	1/4W	F
		< SWITCH >				
S511	1-554-303-21	SWITCH, TACTILE (FREQUENCY -)				
S512	1-554-303-21	SWITCH, TACTILE (FREQUENCY +)				
S513	1-554-303-21	SWITCH, TACTILE (ENTER/NEXT)				
S514	1-554-303-21	SWITCH, TACTILE (DBFB)				
S560	1-554-303-21	SWITCH, TACTILE (KARAOKE PON/MPX)				
S561	1-467-869-11	ENCODER, ROTARY (VOLUME)				
S562	1-467-968-11	ENCODER, ROTARY (MULTI FUNCTION CONTROL)				
**********						
*	1-650-669-11	LEAF SWITCH BOARD				
		**********				
		< CONNECTOR >				
* CN1001	1-568-854-11	SOCKET, CONNECTOR 11P				
		< TRANSISTOR >				
Q1001	8-749-010-90	TRANSISTOR PHOTO REFLECTOR NJL5165KA-H				
Q1002	8-749-010-90	TRANSISTOR PHOTO REFLECTOR NJL5165KA-H				
		< RESISTOR >				
R1001	1-249-412-11	CARBON	390	5%	1/4W	F
R1002	1-249-412-11	CARBON	390	5%	1/4W	F
R1003	1-249-414-11	CARBON	560	5%	1/4W	F
R1004	1-247-834-11	CARBON	1.3K	5%	1/4W	
R1005	1-247-818-11	CARBON	300	5%	1/4W	
		< SWITCH >				
S1001	1-692-832-11	SWITCH, PUSH (1 KEY)(A PLAY)				
S1002	1-692-832-11	SWITCH, PUSH (1 KEY)(B PLAY)				
S1003	1-572-248-11	SWITCH, LEAF (A HALF)				
S1004	1-571-281-21	SWITCH, LEAF (A CrO2)				
S1005	1-571-281-21	SWITCH, LEAF (REC A)				
S1006	1-572-248-11	SWITCH, LEAF (B HALF)				
S1008	1-571-281-21	SWITCH, LEAF (B CrO2)				
S1009	1-571-281-21	SWITCH, LEAF (REC B)				
**********						
*	1-650-836-11	LOADING BOARD				
		**********				
		< CONNECTOR >				
* CN291	1-568-943-11	PIN, CONNECTOR 5P				
		< SWITCH >				
S291	1-572-086-11	SWITCH, LEAF (LOAD OUT)				
S292	1-572-086-11	SWITCH, LEAF (LOAD IN)				
**********						
*	A-4389-425-A	MAIN BOARD, COMPLETE (AEP,UK)				
		**********				
*	A-4389-426-A	MAIN BOARD, COMPLETE (G,IT)				
		**********				
*	A-4389-427-A	MAIN BOARD, COMPLETE (EE)				
		**********				
*	A-4389-428-A	MAIN BOARD, COMPLETE (E,EA,HK,MY,SP,TW)				
		**********				
*	A-4389-429-A	MAIN BOARD, COMPLETE (JE)				
		**********				
*	A-4390-120-A	MAIN BOARD, COMPLETE (TH)				
		**********				
*	A-4390-506-A	MAIN BOARD, COMPLETE (IA)				
		**********				
	1-537-770-21	TERMINAL BOARD, GROUND				
	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S				
		< CAPACITOR >				
C201	1-126-961-11	ELECT	2.2uF	20%	50V	
C202	1-162-600-11	CERAMIC	0.0047uF	30%	16V	
C203	1-124-472-11	ELECT	470uF	20%	10V	
C204	1-162-282-31	CERAMIC	100PF	10%	50V	
C205	1-162-282-31	CERAMIC	100PF	10%	50V	
C206	1-162-306-11	CERAMIC	0.01uF	30%	16V	
C207	1-162-306-11	CERAMIC	0.01uF	30%	16V	
C208	1-162-306-11	CERAMIC	0.01uF	30%	16V	

MAIN

Ref. No.	Part No.	Description			Remark
C209	1-126-952-11	ELECT	1000uF	20%	16V
C251	1-126-961-11	ELECT	2.2uF	20%	50V
C252	1-162-600-11	CERAMIC	0.0047uF	30%	16V
C301	1-130-479-00	MYLAR	0.0047uF	5%	50V
C302	1-162-290-31	CERAMIC	470PF	10%	50V
C303	1-164-159-11	CERAMIC	0.1uF		50V
C305	1-124-903-11	ELECT	1uF	20%	50V
C306	1-124-902-00	ELECT	0.47uF	20%	50V
C307	1-126-964-11	ELECT	10uF	20%	50V
C308	1-126-964-11	ELECT	10uF	20%	50V
C309	1-124-903-11	ELECT	1uF	20%	50V
C310	1-126-933-11	ELECT	100uF	20%	10V
C351	1-130-479-00	MYLAR	0.0047uF	5%	50V
C352	1-162-290-31	CERAMIC	470PF	10%	50V
C353	1-164-159-11	CERAMIC	0.1uF		50V
C355	1-124-903-11	ELECT	1uF	20%	50V
C356	1-124-902-00	ELECT	0.47uF	20%	50V
C357	1-126-964-11	ELECT	10uF	20%	50V
C358	1-126-964-11	ELECT	10uF	20%	50V
C359	1-124-903-11	ELECT	1uF	20%	50V
C360	1-126-933-11	ELECT	100uF	20%	10V
C401	1-164-159-11	CERAMIC	0.1uF		50V
C402	1-164-159-11	CERAMIC	0.1uF		50V
C403	1-164-159-11	CERAMIC	0.1uF		50V
C404	1-126-933-11	ELECT	100uF	20%	16V
C405	1-126-952-11	ELECT	1000uF	20%	35V
C701	1-162-306-11	CERAMIC	0.01uF	30%	16V
C702	1-126-926-11	ELECT	1000uF	20%	10V
C703	1-126-964-11	ELECT	10uF	20%	50V
C704	1-164-159-11	CERAMIC	0.1uF		50V
C705	1-136-165-00	FILM	0.1uF	5%	50V
C706	1-126-965-11	ELECT	22uF	20%	50V
C707	1-162-206-31	CERAMIC	20PF	5%	50V
C708	1-162-206-31	CERAMIC	20PF	5%	50V
C710	1-162-306-11	CERAMIC	0.01uF	30%	16V
C713	1-162-306-11	CERAMIC	0.01uF	30%	16V
C720	1-164-159-11	CERAMIC	0.1uF		50V
C789	1-126-923-11	ELECT	220uF	20%	10V
C810	1-136-153-00	FILM	0.01uF	5%	50V
C811	1-136-153-00	FILM	0.01uF	5%	50V
C821	1-162-286-31	CERAMIC	220PF	10%	50V
C825	1-109-889-11	ELECT	1uF	20%	50V
C871	1-162-286-31	CERAMIC	220PF	10%	50V
C901	1-136-169-00	FILM	0.22uF	5%	50V
C902	1-136-169-00	FILM	0.22uF	5%	50V
C903	1-136-495-11	FILM	0.068uF	5%	50V
C904	1-136-495-11	FILM	0.068uF	5%	50V
C905	1-136-156-00	FILM	0.018uF	5%	50V
C906	1-136-156-00	FILM	0.018uF	5%	50V
C907	1-130-480-00	MYLAR	0.0056uF	5%	50V

Ref. No.	Part No.	Description			Remark
C908	1-130-479-00	MYLAR	0.0047uF	5%	50V
C909	1-130-474-00	MYLAR	0.0018uF	5%	50V
C910	1-126-964-11	ELECT	10uF	20%	50V
C911	1-126-964-11	ELECT	10uF	20%	50V
C912	1-136-165-00	FILM	0.1uF	5%	50V
C913	1-136-165-00	FILM	0.1uF	5%	50V
C914	1-126-964-11	ELECT	10uF	20%	50V
C915	1-162-600-11	CERAMIC	0.0047uF	30%	16V
C930	1-164-159-11	CERAMIC	0.1uF		50V
C931	1-136-153-00	FILM	0.01uF	5%	50V
C933	1-124-902-00	ELECT	0.47uF	20%	50V
C935	1-164-159-11	CERAMIC	0.1uF		50V
C936	1-126-964-11	ELECT	10uF	20%	50V
C938	1-162-290-31	CERAMIC	470PF	10%	50V
C939	1-126-967-11	ELECT	47uF	20%	10V
C940	1-126-967-11	ELECT	47uF	20%	10V
C951	1-136-169-00	FILM	0.22uF	5%	50V
C952	1-136-169-00	FILM	0.22uF	5%	50V
C953	1-136-495-11	FILM	0.068uF	5%	50V
C954	1-136-495-11	FILM	0.068uF	5%	50V
C955	1-136-156-00	FILM	0.018uF	5%	50V
C956	1-136-156-00	FILM	0.018uF	5%	50V
C957	1-130-480-00	MYLAR	0.0056uF	5%	50V
C958	1-130-479-00	MYLAR	0.0047uF	5%	50V
C959	1-130-474-00	MYLAR	0.0018uF	5%	50V
C960	1-126-964-11	ELECT	10uF	20%	50V
C961	1-126-964-11	ELECT	10uF	20%	50V
C962	1-136-165-00	FILM	0.1uF	5%	50V
C963	1-136-165-00	FILM	0.1uF	5%	50V
C964	1-126-964-11	ELECT	10uF	20%	50V
C965	1-162-600-11	CERAMIC	0.0047uF	30%	16V
C1001	1-126-768-11	ELECT	2200uF	20%	16V
C1002	1-126-768-11	ELECT	2200uF	20%	16V
C1003	1-126-964-11	ELECT	10uF	20%	50V
C1005	1-126-964-11	ELECT	10uF	20%	50V
C1006	1-126-933-11	ELECT	100uF	20%	10V
C1007	1-126-933-11	ELECT	100uF	20%	16V
C1008	1-126-933-11	ELECT	100uF	20%	16V
C1009	1-162-306-11	CERAMIC	0.01uF	30%	16V
C1010	1-136-165-00	FILM	0.1uF	5%	50V
C1011	1-136-165-00	FILM	0.1uF	5%	50V
C1012	1-126-964-11	ELECT	10uF	20%	50V
C1013	1-126-916-11	ELECT	1000uF	20%	6.3V
C1014	1-126-964-11	ELECT	10uF	20%	50V
C1015	1-126-964-11	ELECT	10uF	20%	50V
C1016	1-126-952-11	ELECT	1000uF	20%	16V
C1017	1-126-925-11	ELECT	470uF	20%	10V
C1018	1-126-943-11	ELECT	2200uF	20%	25V
C1019	1-126-934-11	ELECT	220uF	20%	16V
C1020	1-126-947-11	ELECT	47uF	20%	35V
C1021	1-126-964-11	ELECT	10uF	20%	50V

Ref. No.	Part No.	Description			Remark
C1022	1-126-968-11	ELECT	100uF	20% 50V	
C1023	1-126-968-11	ELECT	100uF	20% 50V	
C1025	1-126-925-11	ELECT	470uF	20% 10V	
C1026	1-126-925-11	ELECT	470uF	20% 10V	
C1221	1-126-933-11	ELECT	100uF	20% 10V	
C1222	1-126-923-11	ELECT	220uF	20% 10V	
C1223	1-126-923-11	ELECT	220uF	20% 10V	
C1224	1-124-925-11	ELECT	2.2uF	20% 100V	
C1230	1-126-974-11	ELECT	3300uF	20% 50V	
C1235	1-126-974-11	ELECT	3300uF	20% 50V	
C1248	1-136-495-11	FILM	0.068uF	5% 50V (AEP,UK,G,IT,EE)	
C1249	1-136-495-11	FILM	0.068uF	5% 50V (AEP,UK,G,IT,EE)	
C1250	1-162-306-11	CERAMIC	0.01uF	20% 50V (AEP,UK,G,IT,EE)	
C1270	1-130-781-00	FILM	0.22uF	10% 100V	
C1271	1-130-781-00	FILM	0.22uF	10% 100V	
C1272	1-164-159-11	CERAMIC	0.1uF	50V (AEP,UK,G,IT,EE)	
C1298	1-136-495-11	FILM	0.068uF	5% 50V (AEP,UK,G,IT,EE)	
C1299	1-136-495-11	FILM	0.068uF	5% 50V (AEP,UK,G,IT,EE)	
C1300	1-162-306-11	CERAMIC	0.01uF	20% 50V (AEP,UK,G,IT,EE)	
		< CONNECTOR >			
CN201	1-770-067-11	CONNECTOR, FFC/FPC 19P			
CN401	1-568-838-11	SOCKET, CONNECTOR 21P			
* CN402	1-568-830-11	SOCKET, CONNECTOR 11P			
* CN403	1-568-449-11	HOUSING, CONNECTOR(PC BOARD)3P			
* CN404	1-568-449-11	HOUSING, CONNECTOR(PC BOARD)3P			
* CN702	1-568-830-11	SOCKET, CONNECTOR 11P			
* CN703	1-568-832-11	SOCKET, CONNECTOR 13P (TH)			
* CN703	1-568-834-11	SOCKET, CONNECTOR 15P (EXCEPT TH)			
		< DIODE >			
D201	8-719-987-63	DIODE 1N4148M			
D202	8-719-987-63	DIODE 1N4148M			
D205	8-719-010-33	DIODE UZ-4.7BSB			
D401	8-719-933-54	DIODE HZS9A2L			
D701	8-719-987-63	DIODE 1N4148M			
D702	8-719-987-63	DIODE 1N4148M			
D703	8-719-987-63	DIODE 1N4148M			
D704	8-719-987-63	DIODE 1N4148M			
D705	8-719-987-63	DIODE 1N4148M			
D706	8-719-200-82	DIODE 11ES2 (IA)			
D706	8-719-024-99	DIODE 11ES2-NTA2B (EXCEPT IA)			
D707	8-719-987-63	DIODE 1N4148M			
D708	8-719-987-63	DIODE 1N4148M			
D1001	8-719-200-82	DIODE 11ES2 (IA)			

Ref. No.	Part No.	Description	Remark
D1001	8-719-024-99	DIODE 11ES2-NTA2B (EXCEPT IA)	
D1002	8-719-200-82	DIODE 11ES2 (IA)	
D1002	8-719-024-99	DIODE 11ES2-NTA2B (EXCEPT IA)	
D1003	8-719-200-82	DIODE 11ES2 (IA)	
D1003	8-719-024-99	DIODE 11ES2-NTA2B (EXCEPT IA)	
D1004	8-719-200-82	DIODE 11ES2 (IA)	
D1004	8-719-024-99	DIODE 11ES2-NTA2B (EXCEPT IA)	
D1005	8-719-200-82	DIODE 11ES2 (IA)	
D1005	8-719-024-99	DIODE 11ES2-NTA2B (EXCEPT IA)	
D1006	8-719-200-82	DIODE 11ES2 (IA)	
D1006	8-719-024-99	DIODE 11ES2-NTA2B (EXCEPT IA)	
D1007	8-719-987-63	DIODE 1N4148M	
D1008	8-719-001-43	DIODE UZL-11M1-TA (IA,TH)	
D1008	8-719-001-42	DIODE UZL-11M1 (EXCEPT IA,TH)	
D1009	8-719-987-63	DIODE 1N4148M	
D1010	8-719-987-63	DIODE 1N4148M	
D1011	8-719-010-43	DIODE UZ-5.6BSC	
D1013	8-719-200-82	DIODE 11ES2 (IA)	
D1013	8-719-024-99	DIODE 11ES2-NTA2B (EXCEPT IA)	
D1014	8-719-200-82	DIODE 11ES2 (IA)	
D1014	8-719-024-99	DIODE 11ES2-NTA2B (EXCEPT IA)	
D1016	8-719-200-82	DIODE 11ES2 (IA)	
D1016	8-719-024-99	DIODE 11ES2-NTA2B (EXCEPT IA)	
D1017	8-719-200-82	DIODE 11ES2 (IA)	
D1017	8-719-024-99	DIODE 11ES2-NTA2B (EXCEPT IA)	
D1018	8-719-200-82	DIODE 11ES2 (IA)	
D1018	8-719-024-99	DIODE 11ES2-NTA2B (EXCEPT IA)	
D1021	8-719-200-82	DIODE 11ES2 (IA)	
D1021	8-719-024-99	DIODE 11ES2-NTA2B (EXCEPT IA)	
D1022	8-719-200-82	DIODE 11ES2 (IA)	
D1022	8-719-024-99	DIODE 11ES2-NTA2B (EXCEPT IA)	
D1023	8-719-011-05	DIODE UZ-27BS	
D1059	8-719-987-63	DIODE 1N4148M	
D1069	8-719-987-63	DIODE 1N4148M	
D1095	8-719-987-63	DIODE 1N4148M	
D1096	8-719-987-63	DIODE 1N4148M	
D1097	8-719-200-82	DIODE 11ES2 (IA)	
D1097	8-719-024-99	DIODE 11ES2-NTA2B (EXCEPT IA)	
D1098	8-719-200-82	DIODE 11ES2 (IA)	
D1098	8-719-024-99	DIODE 11ES2-NTA2B (EXCEPT IA)	
D1099	8-719-200-82	DIODE 11ES2 (IA)	
D1099	8-719-024-99	DIODE 11ES2-NTA2B (EXCEPT IA)	
D1204	8-719-987-63	DIODE 1N4148M	
D1205	8-719-987-63	DIODE 1N4148M	
D1230	8-719-987-63	DIODE 1N4148M	
D1250	8-719-028-23	DIODE D3SBA20-4101	
D1309	8-719-987-63	DIODE 1N4148M	
D1310	8-719-987-63	DIODE 1N4148M	

MAIN

Ref. No.	Part No.	Description	Remark
		< FUSE >	
⚠F1601	1-532-504-31	FUSE,TIME-LAG (4.0A 250V)	
⚠F1602	1-532-504-31	FUSE,TIME-LAG (4.0A 250V)	
		< FUSE HOLDER >	
FH1001	1-533-217-31	HOLDER, FUSE	
FH1002	1-533-217-31	HOLDER, FUSE	
FH1003	1-533-217-31	HOLDER, FUSE	
FH1004	1-533-217-31	HOLDER, FUSE	
		< IC >	
IC201	8-759-822-09	IC LB1641	
IC401	8-759-289-38	IC HA12195NT	
IC402	8-759-822-09	IC LB1641	
IC701	8-759-392-42	IC TMP87CS64YF-6397	
IC702	8-759-165-80	IC PST600C-T	
IC802	8-759-000-48	IC MC14052BCP	
IC901	8-759-331-39	IC M62427FP	
IC1001	8-759-231-53	IC TA7805S	
IC1002	8-759-604-86	IC M5F7807	
IC1003	8-759-604-86	IC M5F7807	
IC1004	8-759-604-90	IC M5F7907L	
IC1202	8-759-111-68	IC UPC1237HA	
		< JACK >	
J801	1-774-725-11	JACK, PIN 2P (VIDEO (AUDIO))	
J1201	1-774-785-11	JACK, PIN 1P (SUPER WOOFER) (E,EA,HK,MY,SP,TW,IA,TH)	
		< COIL >	
L1201	1-420-872-00	COIL, AIR-CORE (AEP,UK,G,IT,EE)	
L1251	1-420-872-00	COIL, AIR-CORE (AEP,UK,G,IT,EE)	
		< TRANSISTOR >	
Q301	8-729-119-78	TRANSISTOR 2SC403SP-51	
Q351	8-729-119-78	TRANSISTOR 2SC403SP-51	
Q401	8-729-119-78	TRANSISTOR 2SC403SP-51	
Q402	8-729-900-65	TRANSISTOR DTA144ES	
Q403	8-729-801-93	TRANSISTOR 2SD1387	
Q406	8-729-900-80	TRANSISTOR DTC114ES	
Q407	8-729-422-57	TRANSISTOR UN4111	
Q408	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q409	8-729-900-80	TRANSISTOR DTC114ES	
Q410	8-729-900-65	TRANSISTOR DTA144ES	
Q411	8-729-900-65	TRANSISTOR DTA144ES	
Q412	8-729-900-65	TRANSISTOR DTA144ES	
Q701	8-729-119-78	TRANSISTOR 2SC403SP-51	
Q820	8-729-422-57	TRANSISTOR UN4111	
Q901	8-729-119-78	TRANSISTOR 2SC403SP-51	
Q902	8-729-119-78	TRANSISTOR 2SC403SP-51	
Q951	8-729-119-78	TRANSISTOR 2SC403SP-51	
Q952	8-729-119-78	TRANSISTOR 2SC403SP-51	
Q953	8-729-141-26	TRANSISTOR 2SC3622A-LK	
Q954	8-729-141-26	TRANSISTOR 2SC3622A-LK	
Q1001	8-729-118-01	TRANSISTOR 2SB1116	
Q1002	8-729-900-36	TRANSISTOR DTC124ES	
Q1003	8-729-030-18	TRANSISTOR 2SD2525	
Q1006	8-729-030-19	TRANSISTOR 2SB1640	
Q1204	8-729-900-63	TRANSISTOR DTA124ES	
Q1205	8-729-900-36	TRANSISTOR DTC124ES	
Q1206	8-729-900-80	TRANSISTOR DTC114ES	
Q1207	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q1208	8-729-119-76	TRANSISTOR 2SA1175-HFE	
		< RESISTOR >	
R201	1-249-415-11	CARBON 680 5% 1/4W	F
R202	1-249-435-11	CARBON 33K 5% 1/4W	
R203	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R206	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R207	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R208	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R209	1-249-413-11	CARBON 470 5% 1/4W	F
R210	1-249-413-11	CARBON 470 5% 1/4W	F
R251	1-249-415-11	CARBON 680 5% 1/4W	F
R252	1-249-435-11	CARBON 33K 5% 1/4W	
R301	1-249-430-11	CARBON 12K 5% 1/4W	
R302	1-249-431-11	CARBON 15K 5% 1/4W	
R303	1-249-432-11	CARBON 18K 5% 1/4W	
R304	1-249-428-11	CARBON 8.2K 5% 1/4W	F
R305	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R306	1-247-840-00	CARBON 2.4K 5% 1/4W	
R307	1-249-433-11	CARBON 22K 5% 1/4W	
R308	1-249-421-11	CARBON 2.2K 5% 1/4W	F
R309	1-249-428-11	CARBON 8.2K 5% 1/4W	F
R310	1-249-417-11	CARBON 1K 5% 1/4W	F
R351	1-249-430-11	CARBON 12K 5% 1/4W	
R352	1-249-431-11	CARBON 15K 5% 1/4W	
R354	1-249-428-11	CARBON 8.2K 5% 1/4W	F
R355	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R356	1-247-840-00	CARBON 2.4K 5% 1/4W	
R357	1-249-433-11	CARBON 22K 5% 1/4W	
R358	1-249-421-11	CARBON 2.2K 5% 1/4W	F
R359	1-249-428-11	CARBON 8.2K 5% 1/4W	F
R360	1-249-417-11	CARBON 1K 5% 1/4W	F
R401	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R402	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R403	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R404	1-249-417-11	CARBON 1K 5% 1/4W	F
R405	1-249-437-11	CARBON 47K 5% 1/4W	
R406	1-249-437-11	CARBON 47K 5% 1/4W	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description			Remark	
R407	1-249-437-11	CARBON	47K	5%	1/4W	
R408	1-249-437-11	CARBON	47K	5%	1/4W	
R409	1-249-429-11	CARBON	10K	5%	1/4W	
R410	1-247-882-11	CARBON	130K	5%	1/4W	
R411	1-247-866-11	CARBON	30K	5%	1/4W	
R412	1-249-429-11	CARBON	10K	5%	1/4W	
R413	1-247-864-11	CARBON	24K	5%	1/4W	
R414	1-249-429-11	CARBON	10K	5%	1/4W	
R415	1-249-429-11	CARBON	10K	5%	1/4W	
R416	1-249-429-11	CARBON	10K	5%	1/4W	
R417	1-249-429-11	CARBON	10K	5%	1/4W	
R418	1-249-429-11	CARBON	10K	5%	1/4W	
R419	1-249-429-11	CARBON	10K	5%	1/4W	
R420	1-249-429-11	CARBON	10K	5%	1/4W	
R421	1-249-429-11	CARBON	10K	5%	1/4W	
R454	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R455	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R456	1-249-411-11	CARBON	330	5%	1/4W	
R457	1-249-427-11	CARBON	6.8K	5%	1/4W	F
R458	1-249-429-11	CARBON	10K	5%	1/4W	
R461	1-249-417-11	CARBON	1K	5%	1/4W	F
R701	1-249-429-11	CARBON	10K	5%	1/4W	
R702	1-249-437-11	CARBON	47K	5%	1/4W	
R703	1-249-437-11	CARBON	47K	5%	1/4W	
R704	1-249-429-11	CARBON	10K	5%	1/4W	
R705	1-249-429-11	CARBON	10K	5%	1/4W	
R708	1-249-429-11	CARBON	10K	5%	1/4W	
R709	1-249-429-11	CARBON	10K	5%	1/4W	
R711	1-249-429-11	CARBON	10K	5%	1/4W	
R715	1-249-429-11	CARBON	10K	5%	1/4W	
R716	1-247-807-31	CARBON	100	5%	1/4W	
R717	1-247-807-31	CARBON	100	5%	1/4W	
R720	1-247-807-31	CARBON	100	5%	1/4W	
R724	1-247-807-31	CARBON	100	5%	1/4W	
R725	1-247-807-31	CARBON	100	5%	1/4W	
R726	1-247-807-31	CARBON	100	5%	1/4W	
R727	1-247-807-31	CARBON	100	5%	1/4W	
R728	1-247-807-31	CARBON	100	5%	1/4W	
R729	1-247-807-31	CARBON	100	5%	1/4W	
R730	1-247-807-31	CARBON	100	5%	1/4W	
R731	1-247-807-31	CARBON	100	5%	1/4W	
R732	1-247-807-31	CARBON	100	5%	1/4W	
R733	1-247-807-31	CARBON	100	5%	1/4W	
R734	1-247-807-31	CARBON	100	5%	1/4W	
R735	1-247-807-31	CARBON	100	5%	1/4W	
R736	1-247-807-31	CARBON	100	5%	1/4W	
R737	1-247-807-31	CARBON	100	5%	1/4W	
R738	1-249-427-11	CARBON	6.8K	5%	1/4W	F
R739	1-249-435-11	CARBON	33K	5%	1/4W	
R740	1-249-415-11	CARBON	680	5%	1/4W	F (JE)
R740	1-249-423-11	CARBON	3.3K	5%	1/4W	F (TH)
R740	1-249-427-11	CARBON	6.8K	5%	1/4W	F (G,IT)
R740	1-249-435-11	CARBON	33K	5%	1/4W	(EE)
R740	1-249-429-11	CARBON	10K	5%	1/4W	(AEP,UK)
R741	1-249-429-11	CARBON	10K	5%	1/4W	(TH)
R741	1-249-431-11	CARBON	15K	5%	1/4W	(JE)
R741	1-249-427-11	CARBON	6.8K	5%	1/4W	F (EE)
R741	1-249-423-11	CARBON	3.3K	5%	1/4W	F (AEP,UK,G,IT)
R743	1-249-413-11	CARBON	470	5%	1/4W	F
R744	1-247-807-31	CARBON	100	5%	1/4W	
R745	1-247-807-31	CARBON	100	5%	1/4W	
R746	1-249-429-11	CARBON	10K	5%	1/4W	
R747	1-249-429-11	CARBON	10K	5%	1/4W	
R748	1-249-429-11	CARBON	10K	5%	1/4W	
R749	1-249-429-11	CARBON	10K	5%	1/4W	
R751	1-247-807-31	CARBON	100	5%	1/4W	
R752	1-247-807-31	CARBON	100	5%	1/4W	
R753	1-247-807-31	CARBON	100	5%	1/4W	
R756	1-249-429-11	CARBON	10K	5%	1/4W	
R757	1-247-807-31	CARBON	100	5%	1/4W	
R758	1-247-807-31	CARBON	100	5%	1/4W	
R759	1-247-807-31	CARBON	100	5%	1/4W	
R760	1-247-807-31	CARBON	100	5%	1/4W	
R761	1-247-807-31	CARBON	100	5%	1/4W	
R762	1-249-429-11	CARBON	10K	5%	1/4W	
R763	1-249-429-11	CARBON	10K	5%	1/4W	
R764	1-249-429-11	CARBON	10K	5%	1/4W	
R821	1-249-417-11	CARBON	1K	5%	1/4W	F
R822	1-249-441-11	CARBON	100K	5%	1/4W	
R825	1-247-887-00	CARBON	220K	5%	1/4W	
R826	1-249-441-11	CARBON	100K	5%	1/4W	
R830	1-249-429-11	CARBON	10K	5%	1/4W	
R871	1-249-417-11	CARBON	1K	5%	1/4W	F
R872	1-249-441-11	CARBON	100K	5%	1/4W	
R901	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R902	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R905	1-249-441-11	CARBON	100K	5%	1/4W	
R906	1-247-891-00	CARBON	330K	5%	1/4W	
R907	1-247-887-00	CARBON	220K	5%	1/4W	
R908	1-249-433-11	CARBON	22K	5%	1/4W	
R909	1-249-419-11	CARBON	1.5K	5%	1/4W	F
R910	1-249-429-11	CARBON	10K	5%	1/4W	
R911	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R912	1-249-441-11	CARBON	100K	5%	1/4W	
R913	1-249-429-11	CARBON	10K	5%	1/4W	
R914	1-249-437-11	CARBON	47K	5%	1/4W	
R915	1-249-441-11	CARBON	100K	5%	1/4W	

MAIN

Ref. No.	Part No.	Description			Remark
R917	1-247-903-00	CARBON	1M	5%	1/4W
R918	1-249-431-11	CARBON	15K	5%	1/4W
R920	1-249-441-11	CARBON	100K	5%	1/4W
R930	1-249-429-11	CARBON	10K	5%	1/4W
R931	1-249-429-11	CARBON	10K	5%	1/4W
R932	1-249-425-11	CARBON	4.7K	5%	1/4W F
R935	1-249-437-11	CARBON	47K	5%	1/4W
R938	1-247-807-31	CARBON	100	5%	1/4W
R940	1-249-429-11	CARBON	10K	5%	1/4W
R941	1-249-429-11	CARBON	10K	5%	1/4W
R942	1-249-429-11	CARBON	10K	5%	1/4W
R945	1-249-421-11	CARBON	2.2K	5%	1/4W F
R951	1-249-421-11	CARBON	2.2K	5%	1/4W F
R952	1-249-421-11	CARBON	2.2K	5%	1/4W F
R955	1-249-441-11	CARBON	100K	5%	1/4W
R956	1-247-891-00	CARBON	330K	5%	1/4W
R957	1-247-887-00	CARBON	220K	5%	1/4W
R958	1-249-433-11	CARBON	22K	5%	1/4W
R959	1-249-419-11	CARBON	1.5K	5%	1/4W F
R960	1-249-429-11	CARBON	10K	5%	1/4W
R961	1-249-421-11	CARBON	2.2K	5%	1/4W F
R962	1-249-441-11	CARBON	100K	5%	1/4W
R963	1-249-429-11	CARBON	10K	5%	1/4W
R964	1-249-437-11	CARBON	47K	5%	1/4W
R965	1-249-441-11	CARBON	100K	5%	1/4W
R967	1-247-903-00	CARBON	1M	5%	1/4W
R968	1-249-431-11	CARBON	15K	5%	1/4W
R970	1-247-903-00	CARBON	1M	5%	1/4W
R1001	1-249-421-11	CARBON	2.2K	5%	1/4W F
R1002	1-249-409-11	CARBON	220	5%	1/4W F
R1003	1-249-417-11	CARBON	1K	5%	1/4W F
R1007	1-249-417-11	CARBON	1K	5%	1/4W F
R1020	1-249-409-11	CARBON	220	5%	1/4W F
R1021	1-249-409-11	CARBON	220	5%	1/4W F
R1022	1-249-421-11	CARBON	2.2K	5%	1/4W F
R1023	1-249-417-11	CARBON	1K	5%	1/4W F
R1220	1-249-389-11	CARBON	4.7	5%	1/4W F
					(AEP,UK,G,IT,EE)
R1221	1-249-389-11	CARBON	4.7	5%	1/4W F
					(AEP,UK,G,IT,EE)
R1222	1-249-407-11	CARBON	150	5%	1/4W F
R1223	1-249-407-11	CARBON	150	5%	1/4W F
					(TH)
⚠R1226	1-215-864-00	METAL OXIDE	150	5%	1W F
R1231	1-249-437-11	CARBON	47K	5%	1/4W
			(E,JE,EA,HK,MY,SP,TW,IA,TH)		
R1233	1-249-425-11	CARBON	4.7K	5%	1/4W F
R1234	1-249-425-11	CARBON	4.7K	5%	1/4W F
R1235	1-249-435-11	CARBON	33K	5%	1/4W
R1236	1-249-441-11	CARBON	100K	5%	1/4W
R1237	1-249-429-11	CARBON	10K	5%	1/4W

Ref. No.	Part No.	Description			Remark
R1238	1-249-419-11	CARBON	1.5K	5%	1/4W
R1240	1-249-438-11	CARBON	56K	5%	1/4W
R1241	1-249-397-11	CARBON	22	5%	1/4W F
R1245	1-249-433-11	CARBON	22K	5%	1/4W
R1249	1-249-389-11	CARBON	4.7	5%	1/4W F
					(AEP,UK,G,IT,EE)
R1250	1-249-429-11	CARBON	10K	5%	1/4W
R1264	1-249-429-11	CARBON	10K	5%	1/4W
R1265	1-249-429-11	CARBON	10K	5%	1/4W
R1266	1-249-429-11	CARBON	10K	5%	1/4W
R1267	1-249-429-11	CARBON	10K	5%	1/4W
R1270	1-249-389-11	CARBON	4.7	5%	1/4W F
					(AEP,UK,G,IT,EE)
R1271	1-249-389-11	CARBON	4.7	5%	1/4W F
					(AEP,UK,G,IT,EE)
R1272	1-249-407-11	CARBON	150	5%	1/4W F
R1273	1-249-407-11	CARBON	150	5%	1/4W F
R1281	1-249-437-11	CARBON	47K	5%	1/4W
			(E,JE,EA,HK,MY,SP,TW,IA,TH)		
R1290	1-249-437-11	CARBON	47K	5%	1/4W
R1295	1-249-433-11	CARBON	22K	5%	1/4W
R1296	1-249-421-11	CARBON	2.2K	5%	1/4W F
			(E,JE,EA,HK,MY,SP,TW,IA,TH)		
R1299	1-249-389-11	CARBON	4.7	5%	1/4W F
					(AEP,UK,G,IT,EE)
R1303	1-249-425-11	CARBON	4.7K	5%	1/4W F
R1304	1-249-425-11	CARBON	4.7K	5%	1/4W F
⚠R1601	1-217-637-00	FUSIBLE	1	5%	1/4W F
⚠R1602	1-219-122-91	FUSIBLE	0.33	5%	1/4W F
⚠R1603	1-219-122-91	FUSIBLE	0.33	5%	1/4W F
⚠R1604	1-217-637-00	FUSIBLE	1	5%	1/4W F
		< VARIABLE RESISTOR >			
RV301	1-238-600-11	RES, ADJ, CARBON 10K			
RV351	1-238-600-11	RES, ADJ, CARBON 10K			
		< RELAY >			
RY1201	1-515-920-11	RELAY (24V)			
		< TERMINAL >			
G1001	1-537-770-21	TERMINAL BOARD,GROUND (AEP,UK,G,IT,EE)			
TM1201	1-537-240-31	TERMINAL BOARD (CHECKER PIN)(SPEAKER)			
		< VIBRATOR >			
X701	1-579-175-11	VIBRATOR, CERAMIC (10MHz)			
X702	1-567-098-41	VIBRATOR, CRYSTAL (32kHz)			

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The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description				Remark
*	A-2007-435-A	MD BOARD, COMPLETE				
		**********				
						(including MOTOR board)
		< CAPACITOR >				
C301	1-162-289-31	CERAMIC	390PF	10%	50V	
C302	1-126-968-11	ELECT	100uF	20%	6.3V	
C303	1-162-282-31	CERAMIC	100PF	10%	50V	
C304	1-107-715-11	ELECT	22uF	20%	16V	
C304	1-130-483-00	MYLAR	0.01uF	5%	50V	
C305	1-107-715-11	ELECT	22uF	20%	16V	
C311	1-162-289-31	CERAMIC	390PF	10%	50V	
C313	1-162-282-31	CERAMIC	100PF	10%	50V	
C314	1-130-487-00	MYLAR	0.022uF	5%	50V	
C315	1-126-233-11	ELECT	22uF	20%	50V	
C331	1-137-427-11	FILM	120PF	5%	50V	
C332	1-162-288-31	CERAMIC	330PF	10%	50V	
C333	1-162-209-31	CERAMIC	27PF	5%	50V	
C401	1-162-289-31	CERAMIC	390PF	10%	50V	
C402	1-126-968-11	ELECT	100uF	20%	6.3V	
C403	1-162-282-31	CERAMIC	100PF	10%	50V	
C404	1-130-483-00	MYLAR	0.01uF	5%	50V	
C411	1-162-289-31	CERAMIC	390PF	10%	50V	
C413	1-162-282-31	CERAMIC	100PF	10%	50V	
C414	1-130-487-00	MYLAR	0.022uF	5%	50V	
C415	1-126-233-11	ELECT	22uF	20%	50V	
C431	1-137-427-11	FILM	120PF	5%	50V	
C432	1-162-288-31	CERAMIC	330PF	10%	50V	
C433	1-162-209-31	CERAMIC	27PF	5%	50V	
C601	1-126-157-11	ELECT	10uF	20%	16V	
C602	1-126-157-11	ELECT	10uF	20%	16V	
C611	1-124-907-11	ELECT	10uF	20%	50V	
C612	1-124-907-11	ELECT	10uF	20%	50V	
C621	1-137-150-11	FILM	0.01uF	5%	100V	
C622	1-126-961-11	ELECT	2.2uF	20%	50V	
C623	1-136-155-00	FILM	0.015uF	5%	50V	
C624	1-130-481-00	MYLAR	0.0068uF	5%	50V	
C625	1-130-481-00	MYLAR	0.0068uF	5%	50V	
C627	1-124-903-11	ELECT	1uF	20%	50V	
C628	1-136-153-00	FILM	0.01uF	5%	50V	
C642	1-104-664-11	ELECT	47uF	20%	16V	
C651	1-161-494-00	CERAMIC	0.022uF		25V	
		< CONNECTOR >				
* CN601	1-568-864-11	SOCKET, CONNECTOR 21P				
* CN602	1-564-718-11	PIN, CONNECTOR (SMALL TYPE) 2P				
* CN651	1-564-521-11	PLUG, CONNECTOR 6P				
		< IC >				
IC601	8-759-710-59	IC NJM4580D-D				
IC602	8-759-143-54	IC uPC1330HA				

Ref. No.	Part No.	Description				Remark
IC611	8-759-710-59	IC NJM4580D-D				
		< COIL >				
L331	1-410-780-11	INDUCTOR 27mH				
L431	1-410-780-11	INDUCTOR 27mH				
		< TRANSISTOR >				
Q621	8-729-142-46	TRANSISTOR 2SC2001-LK				
Q622	8-729-142-46	TRANSISTOR 2SC2001-LK				
Q623	8-729-030-18	TRANSISTOR 2SD2525				
Q651	8-729-900-65	TRANSISTOR DTA144ES				
		< RESISTOR >				
R301	1-247-881-00	CARBON	120K	5%	1/4W	
R302	1-249-409-11	CARBON	220	5%	1/4W	F
R303	1-249-433-11	CARBON	22K	5%	1/4W	
R304	1-247-889-00	CARBON	270K	5%	1/4W	
R305	1-247-858-11	CARBON	13K	5%	1/4W	
R311	1-247-881-00	CARBON	120K	5%	1/4W	
R312	1-247-807-31	CARBON	100	5%	1/4W	
R314	1-247-882-11	CARBON	130K	5%	1/4W	
R315	1-247-850-11	CARBON	6.2K	5%	1/4W	
R331	1-249-430-11	CARBON	12K	5%	1/4W	
R401	1-247-881-00	CARBON	120K	5%	1/4W	
R402	1-249-409-11	CARBON	220	5%	1/4W	F
R403	1-249-433-11	CARBON	22K	5%	1/4W	
R404	1-247-889-00	CARBON	270K	5%	1/4W	
R405	1-247-858-11	CARBON	13K	5%	1/4W	
R411	1-247-881-00	CARBON	120K	5%	1/4W	
R412	1-247-807-31	CARBON	100	5%	1/4W	
R414	1-247-882-11	CARBON	130K	5%	1/4W	
R415	1-247-850-11	CARBON	6.2K	5%	1/4W	
R431	1-249-430-11	CARBON	12K	5%	1/4W	
R601	1-249-409-11	CARBON	220	5%	1/4W	F
R602	1-249-409-11	CARBON	220	5%	1/4W	F
R608	1-249-409-11	CARBON	220	5%	1/4W	F
R609	1-249-433-11	CARBON	22K	5%	1/4W	
R611	1-249-409-11	CARBON	220	5%	1/4W	F
R612	1-249-409-11	CARBON	220	5%	1/4W	F
⚠R621	1-212-851-00	FUSIBLE	5.6	5%	1/4W	F
⚠R622	1-212-851-00	FUSIBLE	5.6	5%	1/4W	F
R623	1-249-432-11	CARBON	18K	5%	1/4W	
R624	1-249-432-11	CARBON	18K	5%	1/4W	
R625	1-249-429-11	CARBON	10K	5%	1/4W	
R651	1-247-856-00	CARBON	11K	5%	1/4W	
R652	1-247-856-00	CARBON	11K	5%	1/4W	
R653	1-249-441-11	CARBON	100K	5%	1/4W	
		< VARIABLE RESISTOR >				
RV301	1-238-598-11	RES, ADJ, CARBON 2.2K				

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

MD PANEL

Ref. No.	Part No.	Description	Remark
RV311	1-238-598-11	RES, ADJ, CARBON 2.2K	
RV341	1-238-551-11	RES, ADJ, CARBON 220K	
RV401	1-238-598-11	RES, ADJ, CARBON 2.2K	
RV411	1-238-598-11	RES, ADJ, CARBON 2.2K	
RV441	1-238-551-11	RES, ADJ, CARBON 220K	
RV651	1-238-599-11	RES, ADJ, CARBON 4.7K	
RV652	1-238-599-11	RES, ADJ, CARBON 4.7K	
		< TRANSFORMER >	
T621	1-423-980-11	TRANSFORMER, BIAS OSCILLATION	
**********			
*	A-4389-446-A	PANEL BOARD, COMPLETE (AEP,UK,G,IT,EE) **********	
*	A-4389-447-A	PANEL BOARD, COMPLETE ********** (E,JE,EA,HK,MY,SP,TW)	
*	A-4390-128-A	PANEL BOARD, COMPLETE (TH) **********	
*	A-4390-514-A	PANEL BOARD, COMPLETE (IA) **********	
*	4-932-810-11	CUSHION (FL)	
*	4-978-168-01	HOLDER, FL TUBE	
		< CAPACITOR >	
C513	1-162-294-31	CERAMIC 0.001uF 10% 50V	
C514	1-124-589-11	ELECT 47uF 20% 16V	
C515	1-164-159-11	CERAMIC 0.1uF 50V	
C522	1-162-306-11	CERAMIC 0.01uF 30% 16V	
C530	1-124-261-00	ELECT 10uF 20% 50V	
C531	1-124-261-00	ELECT 10uF 20% 50V	
C532	1-164-159-11	CERAMIC 0.1uF 50V (AEP, UK, G, IT, EE)	
		< CONNECTOR >	
* CN501	1-568-854-11	SOCKET, CONNECTOR 11P	
		< DIODE >	
D579	8-719-032-87	DIODE SEL5420S-TP (TUNER/BAND)	
D580	8-719-812-44	DIODE TLO124 (EFFECT ON/OFF)	
D581	8-719-033-06	DIODE SEL5920A (GROOVE)	
D583	8-719-057-28	DIODE SML78420-TP4 (▷II)(TH)	
D583	8-719-056-12	DIODE SML79420C-TP4 (▷II)(IA)	
D583	8-719-056-13	DIODE SML79423C-TP15 (▷II) (EXCEPT IA,TH)	
D585	8-719-033-06	DIODE SEL5920A (■ PAUSE)	
D586	8-719-812-44	DIODE TLO124 (● REC)	
D587	8-719-032-87	DIODE SEL5420S-TP (▷)(DECK B)	
D588	8-719-032-87	DIODE SEL5420S-TP (◁)(DECK B)	

Ref. No.	Part No.	Description	Remark
D589	8-719-032-87	DIODE SEL5420S-TP (▷)(DECK A)	
D590	8-719-032-87	DIODE SEL5420S-TP (◁)(DECK A)	
D601	8-719-033-06	DIODE SEL5920A (CD)	
D611	8-719-033-06	DIODE SEL5920A (TUNER)	
D621	8-719-033-06	DIODE SEL5920A (TIMER)	
		< FLUORESCENT INDICATOR >	
FL501	1-517-489-11	INDICATOR TUBE, FLUORESCENT	
		< IC >	
IC501	8-759-375-45	IC ASD042	
IC502	8-759-332-18	IC GP1U27XB	
		< TRANSISTOR >	
Q501	8-729-119-78	TRANSISTOR 2SC403SP-51	
Q502	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q503	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q504	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q507	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q508	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q509	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q510	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q511	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q601	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q602	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q603	8-729-119-76	TRANSISTOR 2SA1175-HFE	
		< RESISTOR >	
R500	1-249-419-11	CARBON 1.5K 5% 1/4W	F
R501	1-249-401-11	CARBON 47 5% 1/4W	F
R502	1-249-413-11	CARBON 470 5% 1/4W	F
R503	1-249-411-11	CARBON 330 5% 1/4W	
R504	1-249-413-11	CARBON 470 5% 1/4W	F
R505	1-249-419-11	CARBON 1.5K 5% 1/4W	F
R506	1-249-401-11	CARBON 47 5% 1/4W	F
R507	1-249-403-11	CARBON 68 5% 1/4W	F
R508	1-247-807-31	CARBON 100 5% 1/4W	
R509	1-249-407-11	CARBON 150 5% 1/4W	F
R510	1-249-407-11	CARBON 150 5% 1/4W	F
R515	1-249-419-11	CARBON 1.5K 5% 1/4W	F
R516	1-249-401-11	CARBON 47 5% 1/4W	F
R517	1-249-403-11	CARBON 68 5% 1/4W	F
R518	1-247-807-31	CARBON 100 5% 1/4W	
R519	1-249-407-11	CARBON 150 5% 1/4W	F
R520	1-249-407-11	CARBON 150 5% 1/4W	F
R521	1-249-409-11	CARBON 220 5% 1/4W	F
R522	1-249-411-11	CARBON 330 5% 1/4W	
R523	1-249-413-11	CARBON 470 5% 1/4W	F
R524	1-249-415-11	CARBON 680 5% 1/4W	F
R525	1-249-417-11	CARBON 1K 5% 1/4W	F

Ref. No.	Part No.	Description			Remark	
R526	1-249-419-11	CARBON	1.5K	5%	1/4W	F
R527	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R528	1-249-423-11	CARBON	3.3K	5%	1/4W	F
R529	1-249-427-11	CARBON	6.8K	5%	1/4W	F
R530	1-249-431-11	CARBON	15K	5%	1/4W	
R531	1-249-419-11	CARBON	1.5K	5%	1/4W	F
R532	1-249-401-11	CARBON	47	5%	1/4W	F
R533	1-249-413-11	CARBON	470	5%	1/4W	F
R534	1-249-409-11	CARBON	220	5%	1/4W	F
R535	1-249-411-11	CARBON	330	5%	1/4W	
R536	1-249-413-11	CARBON	470	5%	1/4W	F
R537	1-249-415-11	CARBON	680	5%	1/4W	F
R538	1-249-417-11	CARBON	1K	5%	1/4W	F
R539	1-249-419-11	CARBON	1.5K	5%	1/4W	F
R540	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R541	1-249-423-11	CARBON	3.3K	5%	1/4W	F
R542	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R543	1-247-807-31	CARBON	100	5%	1/4W	
R544	1-247-807-31	CARBON	100	5%	1/4W	
R545	1-247-807-31	CARBON	100	5%	1/4W	
R546	1-247-807-31	CARBON	100	5%	1/4W	
R547	1-247-807-31	CARBON	100	5%	1/4W	
R548	1-247-807-31	CARBON	100	5%	1/4W	
R549	1-249-429-11	CARBON	10K	5%	1/4W	
R550	1-249-409-11	CARBON	220	5%	1/4W	F
R551	1-249-437-11	CARBON	47K	5%	1/4W	
R561	1-249-429-11	CARBON	10K	5%	1/4W	
R562	1-249-429-11	CARBON	10K	5%	1/4W	
R563	1-249-401-11	CARBON	47	5%	1/4W	F
R564	1-249-401-11	CARBON	47	5%	1/4W	F
R565	1-249-429-11	CARBON	10K	5%	1/4W	
R566	1-249-429-11	CARBON	10K	5%	1/4W	
R567	1-249-429-11	CARBON	10K	5%	1/4W	
R568	1-249-429-11	CARBON	10K	5%	1/4W	
R569	1-249-429-11	CARBON	10K	5%	1/4W	
R570	1-249-437-11	CARBON	47K	5%	1/4W	
R571	1-249-429-11	CARBON	10K	5%	1/4W	
R572	1-249-429-11	CARBON	10K	5%	1/4W	
R573	1-249-429-11	CARBON	10K	5%	1/4W	
R574	1-249-429-11	CARBON	10K	5%	1/4W	
R575	1-249-429-11	CARBON	10K	5%	1/4W	
R576	1-249-429-11	CARBON	10K	5%	1/4W	
R577	1-247-903-00	CARBON	1M	5%	1/4W	
R578	1-247-807-31	CARBON	100	5%	1/4W	
R579	1-249-437-11	CARBON	47K	5%	1/4W	
R580	1-249-407-11	CARBON	150	5%	1/4W	F
R581	1-247-807-31	CARBON	100	5%	1/4W	
R583	1-247-807-31	CARBON	100	5%	1/4W	
R584	1-247-807-31	CARBON	100	5%	1/4W	
R585	1-247-807-31	CARBON	100	5%	1/4W	
R586	1-249-407-11	CARBON	150	5%	1/4W	F
R587	1-247-807-31	CARBON	100	5%	1/4W	
R588	1-247-807-31	CARBON	100	5%	1/4W	
R589	1-247-807-31	CARBON	100	5%	1/4W	
R590	1-247-807-31	CARBON	100	5%	1/4W	
R601	1-249-403-11	CARBON	68	5%	1/4W	F
R611	1-249-403-11	CARBON	68	5%	1/4W	F
R621	1-249-403-11	CARBON	68	5%	1/4W	F
R631	1-249-417-11	CARBON	1K	5%	1/4W	F
R632	1-249-417-11	CARBON	1K	5%	1/4W	F
R633	1-249-417-11	CARBON	1K	5%	1/4W	F
R650	1-249-429-11	CARBON	10K	5%	1/4W	
R651	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R652	1-249-429-11	CARBON	10K	5%	1/4W	
R653	1-249-421-11	CARBON	2.2K	5%	1/4W	F

< SWITCH >

S500	1-554-303-21	SWITCH, TACTILE (POWER)
S501	1-554-303-21	SWITCH, TACTILE (LOOP)
S502	1-554-303-21	SWITCH, TACTILE (⏏ OPEN/CLOSE)
S503	1-554-303-21	SWITCH, TACTILE (■)
S504	1-554-303-21	SWITCH, TACTILE (▷II)
S505	1-554-303-21	SWITCH, TACTILE (TIMER)
S506	1-554-303-21	SWITCH, TACTILE (DISPLAY/DEMO)
S507	1-554-303-21	SWITCH, TACTILE (MULTI FUNCTION CONTROL 1)
S508	1-554-303-21	SWITCH, TACTILE (MULTI FUNCTION CONTROL 2)
S509	1-554-303-21	SWITCH, TACTILE (MULTI FUNCTION CONTROL 3)
S510	1-554-303-21	SWITCH, TACTILE (MULTI FUNCTION CONTROL 4)
S515	1-554-303-21	SWITCH, TACTILE (MENU 1)
S516	1-554-303-21	SWITCH, TACTILE (MENU 2)
S517	1-554-303-21	SWITCH, TACTILE (MENU 3)
S519	1-554-303-21	SWITCH, TACTILE (P FILE)
S520	1-554-303-21	SWITCH, TACTILE (EFFECT ON/OFF)
S521	1-554-303-21	SWITCH, TACTILE (SURROUND)
S522	1-554-303-21	SWITCH, TACTILE (▷)(DECK B)
S523	1-554-303-21	SWITCH, TACTILE (◁)(DECK B)
S524	1-554-303-21	SWITCH, TACTILE (▶▶)(DECK B)
S525	1-554-303-21	SWITCH, TACTILE (■)(DECK B)
S526	1-554-303-21	SWITCH, TACTILE (◀◀)(DECK B)
S527	1-554-303-21	SWITCH, TACTILE (II PAUSE)
S528	1-554-303-21	SWITCH, TACTILE (● REC)
S529	1-554-303-21	SWITCH, TACTILE (CD SYNCHRO)
S530	1-554-303-21	SWITCH, TACTILE (HIGH SPEED DUBBING)
S533	1-554-303-21	SWITCH, TACTILE (TUNER/BAND)
S534	1-554-303-21	SWITCH, TACTILE (FUNCTION)
S535	1-554-303-21	SWITCH, TACTILE (GROOVE)
S536	1-554-303-21	SWITCH, TACTILE (DIRECTION)

PANEL | POWER AMP

Ref. No.	Part No.	Description	Remark
S537	1-554-303-21	SWITCH, TACTILE (DOLBY NR)	
S538	1-554-303-21	SWITCH, TACTILE (▶▶)(DECK A)	
S539	1-554-303-21	SWITCH, TACTILE (■)(DECK A)	
S540	1-554-303-21	SWITCH, TACTILE (◀◀)(DECK A)	
S541	1-554-303-21	SWITCH, TACTILE (▷)(DECK A)	
S542	1-554-303-21	SWITCH, TACTILE (◁)(DECK A)	
		< VIBRATOR >	
X501	1-760-489-11	VIBRATOR, CERAMIC (5MHz)	
**********			
*	A-4389-444-A	POWER AMP BOARD, COMPLETE	
		**********	
		(AEP, UK, G, IT, EE)	
*	A-4389-445-A	POWER AMP BOARD, COMPLETE	
		**********	
		(E,JE,EA,HK,MY,SP,TW)	
*	A-4390-127-A	POWER AMP BOARD, COMPLETE (TH)	
		**********	
*	A-4390-513-A	POWER AMP BOARD, COMPLETE (IA)	
		**********	
		< CAPACITOR >	
C1201	1-126-963-11	ELECT 4.7uF 20% 50V	
C1202	1-162-288-31	CERAMIC 330PF 10% 50V	
C1203	1-162-286-31	CERAMIC 220PF 10% 50V	
C1204	1-126-967-11	ELECT 47uF 20% 10V	
C1205	1-126-967-11	ELECT 47uF 20% 50V	
C1206	1-126-968-11	ELECT 100uF 20% 50V	
C1208	1-126-965-11	ELECT 22uF 20% 50V	
C1210	1-136-495-11	FILM 0.068uF 5% 50V	
C1211	1-136-495-11	FILM 0.068uF 5% 50V	
C1220	1-126-925-11	ELECT 470uF 20% 10V	
C1225	1-162-284-31	CERAMIC 150PF 10% 50V	
C1227	1-164-159-21	CERAMIC 0.1uF 50V	
C1246	1-164-159-11	CERAMIC 0.1uF 50V	(AEP,UK,G,IT,EE)
C1251	1-126-963-11	ELECT 4.7uF 20% 50V	
C1252	1-162-288-31	CERAMIC 330PF 10% 50V	
C1253	1-162-286-31	CERAMIC 220PF 10% 50V	
C1254	1-126-967-11	ELECT 47uF 20% 10V	
C1255	1-126-967-11	ELECT 47uF 20% 50V	
C1256	1-126-968-11	ELECT 100uF 20% 50V	
C1260	1-136-495-11	FILM 0.068uF 5% 50V	
C1261	1-136-495-11	FILM 0.068uF 5% 50V	
C1296	1-164-159-11	CERAMIC 0.1uF 50V	(AEP,UK,G,IT,EE)

Ref. No.	Part No.	Description				Remark
		< DIODE >				
D1201	8-719-987-63	DIODE 1N4148M				
D1202	8-719-987-63	DIODE 1N4148M				
D1251	8-719-987-63	DIODE 1N4148M				
		< IC >				
IC1201	8-749-920-13	IC STK-4132MK2 (E,JE,EA,HK,MY,SP,TW,IA,TH)				
IC1201	8-749-920-19	IC STK-4122-2-K (AEP,UK,G,IT,EE)				
		< TRANSISTOR >				
Q1201	8-729-140-84	TRANSISTOR 2SC1841-PAFAEA				
Q1251	8-729-140-84	TRANSISTOR 2SC1841-PAFAEA				
		< RESISTOR >				
R1201	1-249-417-11	CARBON	1K	5%	1/4W	F
R1202	1-249-437-11	CARBON	47K	5%	1/4W	
R1203	1-249-415-11	CARBON	680	5%	1/4W	F
R1204	1-249-437-11	CARBON	47K	5%	1/4W	
R1205	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R1206	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R1207	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R1208	1-249-425-11	CARBON	4.7K	5%	1/4W	F
⚠R1209	1-212-881-11	FUSIBLE	100	5%	1/4W	F
⚠R1210	1-208-602-11	WIREWOUND	0.22	10%	2W	F
R1211	1-249-417-11	CARBON	1K	5%	1/4W	F
R1212	1-249-431-11	CARBON	15K	5%	1/4W	
R1213	1-249-441-11	CARBON	100K	5%	1/4W	
R1214	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R1215	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R1216	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R1217	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R1218	1-249-397-11	CARBON	22	5%	1/4W	F
R1219	1-249-397-11	CARBON	22	5%	1/4W	F
R1228	1-247-887-00	CARBON	220K	5%	1/4W	
R1230	1-249-429-11	CARBON	10K	5%	1/4W	
R1242	1-249-435-11	CARBON	33K	5%	1/4W	
R1251	1-249-417-11	CARBON	1K	5%	1/4W	F
R1252	1-249-437-11	CARBON	47K	5%	1/4W	
R1253	1-249-415-11	CARBON	680	5%	1/4W	F
R1254	1-249-437-11	CARBON	47K	5%	1/4W	
R1255	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R1256	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R1257	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R1258	1-249-425-11	CARBON	4.7K	5%	1/4W	F
⚠R1259	1-212-881-11	FUSIBLE	100	5%	1/4W	F
⚠R1260	1-208-602-11	WIREWOUND	0.22	10%	2W	F
R1261	1-249-417-11	CARBON	1K	5%	1/4W	F
R1262	1-249-431-11	CARBON	15K	5%	1/4W	
R1263	1-249-441-11	CARBON	100K	5%	1/4W	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description			Remark
R1268	1-249-397-11	CARBON	22	5% 1/4W	F
R1269	1-249-397-11	CARBON	22	5% 1/4W	F
**********					
*	A-4303-514-A	TCB BOARD, COMPLETE (AEP,UK)			
		**********			
*	A-4303-515-A	TCB BOARD, COMPLETE (IT,G)			
		**********			
*	A-4303-516-A	TCB BOARD, COMPLETE (EE)			
		**********			
		< CAPACITOR >			
C1	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C2	1-126-967-11	ELECT	47uF	20%	16V
C3	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C5	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C6	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C7	1-101-004-00	CERAMIC	0.01uF		50V (EE)
C8	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C9	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C10	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C11	1-216-295-11	METAL CHIP	0	5%	1/10W (IT,G)
C16	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C19	1-163-249-11	CERAMIC CHIP	82PF	5%	50V (AEP,UK,EE)
C21	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C22	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C23	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C24	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C26	1-126-967-11	ELECT	47uF	20%	16V
C28	1-126-967-11	ELECT	47uF	20%	16V
C29	1-162-306-11	CERAMIC	0.01uF	30%	16V
C30	1-124-925-11	ELECT	2.2uF	20%	100V
C31	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C32	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C33	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C34	1-163-091-00	CERAMIC CHIP	8PF		50V (IT,G)
C34	1-163-229-11	CERAMIC CHIP	12PF	5%	50V (AEP,UK,EE)
C35	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C36	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C37	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C39	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C40	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C41	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C42	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C43	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C44	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C45	1-163-038-91	CERAMIC CHIP	0.1uF		25V

Ref. No.	Part No.	Description			Remark
C46	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V
C47	1-126-967-11	ELECT	47uF	20%	16V
C48	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C49	1-124-902-00	ELECT	0.47uF	20%	50V
C50	1-124-903-11	ELECT	1.0uF	20%	50V
C51	1-124-903-11	ELECT	1.0uF	20%	50V
C52	1-126-964-11	ELECT	10uF	20%	50V
C53	1-126-964-11	ELECT	10uF	20%	50V
C54	1-126-157-11	ELECT	10uF	20%	16V
C55	1-126-157-11	ELECT	10uF	20%	16V
C56	1-126-157-11	ELECT	10uF	20%	16V
C57	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C58	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C59	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V (AEP,UK,IT,G)
C59	1-163-989-11	CERAMIC CHIP	33000PF	10%	25V (EE)
C60	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V (AEP,UK,IT,G)
C60	1-163-989-11	CERAMIC CHIP	33000PF	10%	25V (EE)
C61	1-126-301-11	ELECT	1.0uF	20%	50V
C62	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C63	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C64	1-126-967-11	ELECT	47uF	20%	16V
C65	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C66	1-126-162-11	ELECT	3.3uF	20%	50V
C67	1-126-933-11	ELECT	100uF	20%	10V
C68	1-162-306-11	CERAMIC	0.01uF	30%	16V
C71	1-162-306-11	CERAMIC	0.01uF	30%	16V
C72	1-126-967-11	ELECT	47uF	20%	16V
C120	1-163-105-00	CERAMIC CHIP	33PF	5%	50V (AEP,UK,IT,G)
		< FILTER >			
CF1	1-567-389-11	FILTER, CERAMIC (EE)			
CF1	1-579-374-71	FILTER, CERAMIC (AEP,UK,IT,G)			
CF2	1-760-393-11	FILTER, CERAMIC (AEP,UK,IT,G)			
CF3	1-567-389-11	FILTER, CERAMIC (EE)			
CF3	1-760-393-11	FILTER, CERAMIC (AEP,UK,IT,G)			
		< CONNECTOR >			
* CN1	1-568-834-11	SOCKET, CONNECTOR 15P			
		< DIODE >			
D21	8-719-976-99	DIODE DTZ5.1B			
D41	8-719-016-74	DIODE 1SS352			
		< FRONTEND >			
FE1	1-693-335-11	FRONT END (3 GANG)(EE)			
FE1	1-233-542-11	FRONT END (4 GANG)(AEP,UK,IT,G)			
FE2	1-233-514-11	ENCAPSULATED COMPONENT (AEP,UK,EE)			
FE2	1-239-260-11	ENCAPSULATED COMPONENT (IT,G)			

TCB

Ref. No.	Part No.	Description	Remark
		< IC >	
IC21	8-759-288-54	IC LC72130	
IC41	8-759-176-03	IC LA1835	
		< IFT >	
IFT41	1-409-636-11	TRANSFORMER, IF (CERAMIC FILTER)	
		< JUMPER RESISTOR >	
JR1	1-216-295-91	METAL CHIP 0 5% 1/10W	(IT,G)
JR2	1-216-295-91	METAL CHIP 0 5% 1/10W	(AEP,UK,EE)
JR3	1-216-295-91	METAL CHIP 0 5% 1/10W	(IT,G)
JR6	1-216-295-91	METAL CHIP 0 5% 1/10W	(AEP,UK,IT,G)
JR7	1-216-295-91	METAL CHIP 0 5% 1/10W	(IT,G)
JR8	1-216-295-91	METAL CHIP 0 5% 1/10W	(AEP,UK,EE)
JR9	1-216-295-91	METAL CHIP 0 5% 1/10W	(AEP,UK,EE)
JR45	1-216-295-91	METAL CHIP 0 5% 1/10W	
JR46	1-216-296-11	METAL CHIP 0 5% 1/8W	
JR47	1-216-295-91	METAL CHIP 0 5% 1/10W	
JR48	1-216-295-91	METAL CHIP 0 5% 1/10W	
JR49	1-216-296-11	METAL CHIP 0 5% 1/8W	
JR51	1-216-295-91	METAL CHIP 0 5% 1/10W	(AEP,UK,EE)
JR52	1-216-295-91	METAL CHIP 0 5% 1/10W	
JR53	1-216-296-11	METAL CHIP 0 5% 1/8W	(AEP,UK,EE)
JR54	1-216-295-91	METAL CHIP 0 5% 1/10W	
		< JUMPER RESISTOR >	
JW4	1-249-413-11	CARBON 470 5% 1/4W	(AEP,UK,IT,G)
JW5	1-249-413-11	CARBON 470 5% 1/4W	(AEP,UK,IT,G)
		< COIL >	
L2	1-414-142-11	MICRO INDUCTOR 1uH (AEP,UK,IT,G)	
L3	1-410-521-11	MICRO INDUCTOR 100uH	
L4	1-410-515-11	INDUCTOR 33uH (AEP,UK,IT,G)	
L41	1-407-500-00	MICRO INDUCTOR 4.7mH (AEP,UK,EE)	
L41	1-410-119-11	MICRO INDUCTOR (EL TYPE) 1mH (IT,G)	
		< FILTER >	
LPF41	1-239-845-11	FILTER, LOW PASS	
LPF42	1-239-845-11	FILTER, LOW PASS	

Ref. No.	Part No.	Description	Remark
		< TRANSISTOR >	
Q1	8-729-201-27	TRANSISTOR 2SC2715Y	
Q2	8-729-201-27	TRANSISTOR 2SC2715Y	
Q3	8-729-201-27	TRANSISTOR 2SC2715Y	
Q4	8-729-201-27	TRANSISTOR 2SC2715Y	
Q5	8-729-424-08	TRANSISTOR UN2111	
Q9	8-729-216-22	TRANSISTOR 2SA812-M5M6 (AEP,UK,EE)	
Q11	8-729-421-22	TRANSISTOR UN2211 (AEP,UK,EE)	
Q12	8-729-421-22	TRANSISTOR UN2211 (AEP,UK,EE)	
Q13	8-729-421-22	TRANSISTOR UN2211 (AEP,UK,EE)	
Q14	8-729-421-22	TRANSISTOR UN2211 (AEP,UK,EE)	
		< RESISTOR >	
R1	1-249-401-11	CARBON 47 5% 1/4W	F
R2	1-216-037-00	METAL CHIP 330 5% 1/10W	
R3	1-216-037-00	METAL CHIP 330 5% 1/10W	
R5	1-216-037-00	METAL CHIP 330 5% 1/10W	
R6	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R7	1-216-037-00	METAL CHIP 330 5% 1/10W	
R8	1-216-037-00	METAL CHIP 330 5% 1/10W	
R9	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R10	1-216-037-00	METAL CHIP 330 5% 1/10W	
R11	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R12	1-216-037-00	METAL CHIP 330 5% 1/10W	
R13	1-216-037-00	METAL CHIP 330 5% 1/10W	
R14	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R18	1-216-073-00	METAL CHIP 10K 5% 1/10W	(AEP,UK,EE)
R19	1-216-073-00	METAL CHIP 10K 5% 1/10W	(AEP,UK,EE)
R21	1-216-049-91	METAL CHIP 1.0K 5% 1/10W	
R22	1-216-049-91	METAL CHIP 1.0K 5% 1/10W	
R23	1-216-049-91	METAL CHIP 1.0K 5% 1/10W	
R24	1-216-025-91	METAL CHIP 100 5% 1/10W	
R25	1-249-417-11	CARBON 1.0K 5% 1/4W	F
R26	1-249-437-11	CARBON 47K 5% 1/4W	
R27	1-249-429-11	CARBON 10K 5% 1/4W	
R28	1-249-417-11	CARBON 1.0K 5% 1/4W	F
R29	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R30	1-216-186-00	METAL CHIP 330 5% 1/8W	
R31	1-216-025-91	METAL CHIP 100 5% 1/10W	
R32	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R33	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R34	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R35	1-216-214-00	METAL CHIP 4.7K 5% 1/8W	
R36	1-216-025-91	METAL CHIP 100 5% 1/10W	
R37	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R38	1-216-089-91	METAL CHIP 47K 5% 1/10W	
R39	1-249-429-11	CARBON 10K 5% 1/4W	
R42	1-216-073-00	METAL CHIP 10K 5% 1/10W	

Ref. No.	Part No.	Description			Remark
R43	1-216-042-00	METAL CHIP	510	5%	1/10W
R44	1-216-013-00	METAL CHIP	33	5%	1/10W
R45	1-249-423-11	CARBON	3.3K	5%	1/4W F
R46	1-216-073-00	METAL CHIP	10K	5%	1/10W
R47	1-216-097-91	METAL CHIP	100K	5%	1/10W
R48	1-249-417-11	CARBON	1.0K	5%	1/4W F
R49	1-216-049-91	METAL CHIP	1.0K	5%	1/10W
R50	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R51	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R53	1-249-429-11	CARBON	10K	5%	1/4W
R55	1-216-162-00	METAL CHIP	33	5%	1/8W
R56	1-249-393-11	CARBON	10	5%	1/4W F
R91	1-216-295-91	METAL CHIP	0	5%	1/10W (AEP,UK,EE)
R92	1-216-073-00	METAL CHIP	10K	5%	1/10W (AEP,UK,EE)
R99	1-249-399-11	CARBON	33	5%	1/4W F
		< VARIABLE RESISTOR >			
RV41	1-238-601-11	RES, ADJ, CARBON 22K			
RV42	1-238-600-11	RES, ADJ, CARBON 10K			
		< TERMINAL >			
TM1	1-537-488-11	TERMINAL BOARD (ANT)(ANTENNA)			
		< VIBRATOR >			
X21	1-760-549-11	VIBRATOR, CRYSTAL (4.5MHz)			
X41	1-760-220-11	FILTER, CERAMIC (10.7MHz)			
X42	1-527-981-00	FILTER, CERAMIC (450kHz)			
X43	1-577-075-11	OSCILLATOR, CERAMIC (456kHz)			
**********					
*	A-4303-506-A	TCB BOARD, COMPLETE (IA) **********			
*	A-4303-518-A	TCB BOARD, COMPLETE (E,EA,HK,SP,MY,TW) **********			
*	A-4303-520-A	TCB BOARD, COMPLETE (JE) **********			
		< CAPACITOR >			
C1	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C2	1-126-967-11	ELECT	47uF	20%	16V
C3	1-163-038-91	CERAMIC CHIP	100000PF		25V
C5	1-163-031-11	CERAMIC CHIP	10000PF		50V
C6	1-163-038-91	CERAMIC CHIP	100000PF		25V
C7	1-101-004-00	CERAMIC	0.01uF		50V
C8	1-163-031-11	CERAMIC CHIP	10000PF		50V
C9	1-163-031-11	CERAMIC CHIP	10000PF		50V
C10	1-163-031-11	CERAMIC CHIP	10000PF		50V

Ref. No.	Part No.	Description			Remark
C11	1-163-038-91	CERAMIC CHIP	100000PF		25V
C14	1-163-038-91	CERAMIC CHIP	100000PF		25V
C15	1-136-162-00	METALIZED FILM	0.056uF	5%	50V
C16	1-163-038-91	CERAMIC CHIP	100000PF		25V
C17	1-163-031-11	CERAMIC CHIP	10000PF		50V
C18	1-163-088-00	CERAMIC CHIP	5PF		50V
C21	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C22	1-163-031-11	CERAMIC CHIP	10000PF		50V
C23	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C24	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C26	1-126-967-11	ELECT	47uF	20%	50V
C28	1-126-967-11	ELECT	47uF	20%	50V
C29	1-162-306-11	CERAMIC	10000PF	20%	16V
C30	1-124-925-11	ELECT	2.2uF	20%	100V
C31	1-163-031-11	CERAMIC CHIP	10000PF		50V
C32	1-163-038-91	CERAMIC CHIP	100000PF		25V
C33	1-163-038-91	CERAMIC CHIP	100000PF		25V
C34	1-163-091-00	CERAMIC CHIP	8PF		50V
C35	1-163-038-91	CERAMIC CHIP	100000PF		25V
C36	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C37	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C38	1-162-211-31	CERAMIC	33PF	5%	50V
C39	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C40	1-163-031-11	CERAMIC CHIP	10000PF		50V
C41	1-163-031-11	CERAMIC CHIP	10000PF		50V
C42	1-163-038-91	CERAMIC CHIP	100000PF		25V
C43	1-163-038-91	CERAMIC CHIP	100000PF		25V
C44	1-163-031-11	CERAMIC CHIP	10000PF		50V
C45	1-163-038-91	CERAMIC CHIP	100000PF		25V
C46	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V
C47	1-126-967-11	ELECT	47uF	20%	50V
C48	1-163-031-11	CERAMIC CHIP	10000PF		50V
C49	1-124-902-00	ELECT	0.47uF	20%	50V
C50	1-124-903-11	ELECT	1.0uF	20%	50V
C51	1-124-903-11	ELECT	1.0uF	20%	50V
C52	1-126-964-11	ELECT	10uF	20%	50V
C53	1-126-964-11	ELECT	10uF	20%	50V
C54	1-126-157-11	ELECT	10uF	20%	16V
C55	1-126-157-11	ELECT	10uF	20%	16V
C56	1-126-157-11	ELECT	10uF	20%	16V
C57	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C58	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C59	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V
C60	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V
C61	1-126-301-11	ELECT	1uF	20%	50V
C62	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C63	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C64	1-126-967-11	CAP, ELECT	47uF	20%	50V
C65	1-163-031-11	CERAMIC CHIP	10000PF		50V

TCB

Ref. No.	Part No.	Description			Remark
C66	1-126-162-11	ELECT	3.3uF	20%	50V
C67	1-126-933-11	ELECT	100uF	20%	16V
C68	1-162-306-11	CERAMIC	10000PF	20%	16V
C71	1-162-306-11	CERAMIC	10000PF	20%	16V
C72	1-126-967-11	ELECT	47uF	20%	50V
		< FILTER >			
CF1	1-567-389-11	FILTER, CERAMIC			
CF3	1-567-389-11	FILTER, CERAMIC			
		< CONNECTOR >			
* CN1	1-568-834-11	SOCKET, CONNECTOR 15P			
		< VARIABLE CAPACITOR >			
CV1	1-141-227-00	CAP, TRIMMER 20PF			
CV2	1-141-227-00	CAP, TRIMMER 20PF			
		< DIODE >			
D1	8-719-976-30	DIODE KV1560NT			
D21	8-719-976-99	DIODE DTZ5.1B			
D41	8-719-016-74	DIODE 1SS352			
		< FRONT END >			
FE1	1-233-532-11	ENCAPSULATED COMPONENT (EXCEPT JE)			
FE1	1-693-251-11	FRONT END (JE)			
FE2	1-239-262-11	ENCAPSULATED COMPONENT			
		< IC >			
IC21	8-759-288-54	IC LC72130			
IC41	8-759-176-03	IC LA1835			
		< IFT >			
IFT41	1-409-636-11	TRANSFORMER, IF (CERAMIC FILTER)			
		< JUMPER RESISTOR >			
JR45	1-216-295-91	METAL GLAZE	0	5%	1/10W
JR46	1-216-296-91	METAL GLAZE	0	5%	1/8W
JR47	1-216-295-91	METAL GLAZE	0	5%	1/10W
JR48	1-216-295-91	METAL GLAZE	0	5%	1/10W
JR49	1-216-296-91	METAL GLAZE	0	5%	1/8W
JR50	1-216-295-91	METAL GLAZE	0	5%	1/10W
JR51	1-216-295-91	METAL GLAZE	0	5%	1/10W
JR52	1-216-295-91	METAL GLAZE	0	5%	1/10W
JR53	1-216-296-91	METAL GLAZE	0	5%	1/8W
JR54	1-216-295-91	METAL GLAZE	0	5%	1/10W
		< COIL >			
L1	1-410-521-11	MICRO INDUCTOR 100uH			
L3	1-410-521-11	MICRO INDUCTOR 100uH			

Ref. No.	Part No.	Description			Remark
L41	1-410-119-11	MICRO INDUCTOR (EL TYPE) 1mH			
		< FILTER >			
LPF41	1-239-845-11	FILTER, LOW PASS			
LPF42	1-239-845-11	FILTER, LOW PASS			
		< TRANSISTOR >			
Q1	8-729-201-27	TRANSISTOR 2SC2715Y-TE85L			
Q2	8-729-201-27	TRANSISTOR 2SC2715Y-TE85L			
Q3	8-729-201-27	TRANSISTOR 2SC2715Y-TE85L			
Q4	8-729-201-27	TRANSISTOR 2SC2715Y-TE85L			
Q5	8-729-424-08	TRANSISTOR UN2111			
Q8	8-729-033-67	TRANSISTOR 2SK211-Y-TE85L			
Q9	8-729-216-22	TRANSISTOR 2SA812-T1-M5M6			
Q10	8-729-216-22	TRANSISTOR 2SA812-T1-M5M6			
Q12	8-729-421-22	TRANSISTOR UN2211			
Q13	8-729-421-22	TRANSISTOR UN2211			
Q14	8-729-421-22	TRANSISTOR UN2211			
		< RESISTOR >			
R1	1-249-401-11	CARBON	47	5%	1/4W
R2	1-216-037-00	METAL CHIP	330	5%	1/10W
R3	1-216-037-00	METAL CHIP	330	5%	1/10W
R5	1-216-037-00	METAL CHIP	330	5%	1/10W
R6	1-216-081-00	METAL CHIP	22K	5%	1/10W
R7	1-216-037-00	METAL CHIP	330	5%	1/10W
R8	1-216-037-00	METAL CHIP	330	5%	1/10W
R9	1-216-081-00	METAL CHIP	22K	5%	1/10W
R10	1-216-037-00	METAL CHIP	330	5%	1/10W
R11	1-216-081-00	METAL CHIP	22K	5%	1/10W
R12	1-216-037-00	METAL CHIP	330	5%	1/10W
R13	1-216-037-00	METAL CHIP	330	5%	1/10W
R14	1-216-081-00	METAL CHIP	22K	5%	1/10W
R18	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R19	1-216-073-00	METAL CHIP	10K	5%	1/10W
R20	1-216-121-91	METAL CHIP	1.0M	5%	1/10W
R21	1-216-049-91	METAL CHIP	1.0K	5%	1/10W
R22	1-216-049-91	METAL CHIP	1.0K	5%	1/10W
R23	1-216-049-91	METAL CHIP	1.0K	5%	1/10W
R24	1-216-025-91	METAL CHIP	100	5%	1/10W
R25	1-249-417-11	CARBON	1K	5%	1/4W
R26	1-249-437-11	CARBON	47K	5%	1/4W
R27	1-249-429-11	CARBON	10K	5%	1/4W
R28	1-249-417-11	CARBON	1K	5%	1/4W
R29	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R30	1-216-186-00	METAL CHIP	330	5%	1/8W
R31	1-216-025-91	METAL CHIP	100	5%	1/10W
R32	1-249-425-11	CARBON	4.7K	5%	1/4W
R33	1-249-425-11	CARBON	4.7K	5%	1/4W
R34	1-216-065-00	METAL CHIP	4.7K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R35	1-216-214-00	METAL CHIP	4.7K	5%	1/8W
R36	1-216-025-91	METAL CHIP	100	5%	1/10W
R37	1-216-073-00	METAL CHIP	10K	5%	1/10W
R38	1-216-089-91	METAL CHIP	47K	5%	1/10W
R39	1-249-429-11	CARBON	10K	5%	1/4W
R42	1-216-073-00	METAL CHIP	10K	5%	1/10W
R43	1-216-042-00	METAL CHIP	510	5%	1/10W
R44	1-216-013-00	METAL CHIP	33	5%	1/10W
R45	1-249-423-11	CARBON	3.3K	5%	1/4W
R46	1-216-073-00	METAL CHIP	10K	5%	1/10W
R47	1-216-097-91	METAL CHIP	100K	5%	1/10W
R48	1-249-423-11	CARBON	3.3K	5%	1/4W
R49	1-216-061-00	METAL CHIP	3.3K	5%	1/4W
R50	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R51	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R53	1-249-429-11	CARBON	10K	5%	1/4W
R54	1-249-399-11	CARBON	33	5%	1/4W
R55	1-216-162-00	METAL CHIP	33	5%	1/10W
R56	1-249-393-11	CARBON	10	5%	1/4W
R91	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R92	1-216-073-00	METAL CHIP	10K	5%	1/10W
R93	1-216-073-00	METAL CHIP	10K	5%	1/10W
R94	1-216-073-00	METAL CHIP	10K	5%	1/10W
R99	1-249-399-11	CARBON	33	5%	1/4W F
		< VARIABLE RESISTOR >			
RV41	1-238-601-11	RES, ADJ, CARBON 22K			
RV42	1-238-600-11	RES, ADJ, CARBON 10K			
		< TRANSFORMER >			
T1	1-409-505-11	COIL (ANT. SW3)			
T2	1-402-960-11	COIL (OSC SW3)			
		< TERMINAL >			
TM1	1-537-238-21	TERMINAL BOARD (ANTENNA)			
		< VIBRATOR >			
X21	1-760-549-11	VIBRATOR, CRYSTAL (4.5MHz)			
X41	1-760-220-11	FILTER, CERAMIC (10.7MHz)			
X42	1-527-981-00	FILTER, CERAMIC (450kHz)			
X43	1-577-075-11	OSCILLATOR, CERAMIC (19kHz)			

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*	A-4303-537-A	TCB BOARD, COMPLETE (TH)			
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		< CAPACITOR >			
C1	1-162-294-31	CERAMIC	0.001uF	10%	50V
C2	1-104-664-11	ELECT	47uF	20%	16V
C3	1-164-159-21	CERAMIC	0.1uF		50V

Ref. No.	Part No.	Description			Remark
C5	1-162-306-11	CERAMIC	10000PF	30%	16V
C6	1-162-306-11	CERAMIC	10000PF	30%	16V
C7	1-101-004-00	CERAMIC	0.01uF		50V
C8	1-162-306-11	CERAMIC	10000PF	30%	16V
C9	1-162-306-11	CERAMIC	10000PF	30%	16V
C11	1-164-159-21	CERAMIC	0.1uF		50V
C12	1-162-198-31	CERAMIC	8.2PF	10%	50V
C14	1-162-306-11	CERAMIC	10000PF	30%	16V
C21	1-102-960-00	CERAMIC	24PF	5%	50V
C22	1-164-159-21	CERAMIC	0.1uF		50V
C23	1-162-306-11	CERAMIC	10000PF	30%	16V
C24	1-104-664-11	ELECT	47uF	20%	16V
C25	1-162-306-11	CERAMIC	10000PF	30%	16V
C26	1-126-964-11	ELECT	10uF	20%	50V
C27	1-164-159-21	CERAMIC	0.1uF		50V
C28	1-124-925-11	ELECT	2.2uF	20%	100V
C29	1-102-960-00	CERAMIC	24PF	5%	50V
C30	1-162-294-31	CERAMIC	0.001uF	10%	50V
C31	1-162-306-11	CERAMIC	10000PF	30%	16V
C41	1-126-933-11	ELECT	100uF	20%	10V
C42	1-162-306-11	CERAMIC	10000PF	30%	16V
C43	1-126-962-11	ELECT	3.3uF	20%	50V
C44	1-162-306-11	CERAMIC	10000PF	30%	16V
C45	1-124-589-11	ELECT	47uF	20%	16V
C46	1-162-600-11	CERAMIC	4700PF	30%	16V
C47	1-162-294-31	CERAMIC	0.001uF	10%	50V
C48	1-126-160-11	ELECT	1.0uF	20%	50V
C49	1-136-159-00	METALIZED FILM	0.033uF	5%	50V
C50	1-136-159-00	METALIZED FILM	0.033uF	5%	50V
C51	1-162-600-11	CERAMIC	4700PF	30%	16V
C52	1-162-600-11	CERAMIC	4700PF	30%	16V
C53	1-126-964-11	ELECT	10uF	20%	50V
C54	1-126-157-11	ELECT	10uF	20%	16V
C55	1-126-964-11	ELECT	10uF	20%	50V
C56	1-126-964-11	ELECT	10uF	20%	50V
C57	1-164-159-21	CERAMIC	0.1uF		50V F
C58	1-162-306-11	CERAMIC	10000PF	30%	16V
C59	1-164-159-21	CERAMIC	0.1uF		50V F
C61	1-164-159-21	CERAMIC	0.1uF		50V F
C62	1-104-664-11	ELECT	47uF	20%	16V
C63	1-164-159-21	CERAMIC	0.1uF		50V F
C64	1-124-902-00	ELECT	0.47uF	20%	50V
C65	1-124-903-11	ELECT	1.0uF	20%	50V
C66	1-124-903-11	ELECT	1.0uF	20%	50V
C67	1-126-964-11	ELECT	10uF	20%	50V
C68	1-162-306-11	CERAMIC	10000PF	30%	16V
C69	1-162-306-11	CERAMIC	10000PF	30%	16V
C70	1-162-306-11	CERAMIC	10000PF	30%	16V
C71	1-162-306-11	CERAMIC	10000PF	30%	16V
C73	1-162-306-11	CERAMIC	10000PF	30%	16V

TCB

Ref. No.	Part No.	Description				Remark
C74	1-126-964-11	ELECT	10uF	20%	50V	
		< FILTER >				
CF1	1-567-389-11	FILTER, CERAMIC				
CF2	1-567-389-11	FILTER, CERAMIC				
		< CONNECTOR >				
* CN1	1-568-832-11	SOCKET, CONNECTOR 13P				
		< DIODE >				
D1	8-719-933-33	DIODE HZS6A1L				
D2	8-719-987-63	DIODE 1N4148M				
		< FRONTEND >				
FE1	1-233-533-11	ENCAPSULATED COMPONENT				
FE2	1-239-260-11	ENCAPSULATED COMPONENT				
		< IC >				
IC1	8-759-288-54	IC LC72130				
IC2	8-759-176-03	IC LA1835				
		< IFT >				
IFT41	1-409-636-11	TRANSFORMER, IF (CERAMIC FILTER)				
		< COIL >				
L41	1-410-119-11	MICRO INDUCTOR (EL TYPE)	1mH			
		< FILTER >				
LPF41	1-239-845-11	FILTER, LOW PASS				
LPF42	1-239-845-11	FILTER, LOW PASS				
		< TRANSISTOR >				
Q1	8-729-230-99	TRANSISTOR 2SC2669O-Y				
Q2	8-729-230-99	TRANSISTOR 2SC2669O-Y				
Q3	8-729-230-99	TRANSISTOR 2SC2669O-Y				
Q4	8-729-230-99	TRANSISTOR 2SC2669O-Y				
Q5	8-729-422-57	TRANSISTOR UN4111				
		< RESISTOR >				
R1	1-249-401-11	CARBON	47	5%	1/4W	F
R2	1-249-411-11	CARBON	330	5%	1/4W	
R3	1-249-411-11	CARBON	330	5%	1/4W	
R5	1-249-411-11	CARBON	330	5%	1/4W	
R6	1-247-863-91	CARBON	22K	5%	1/4W	
R7	1-249-411-11	CARBON	330	5%	1/4W	
R8	1-249-411-11	CARBON	330	5%	1/4W	
R9	1-247-863-91	CARBON	22K	5%	1/4W	
R10	1-249-411-11	CARBON	330	5%	1/4W	
R11	1-247-863-91	CARBON	22K	5%	1/4W	

Ref. No.	Part No.	Description				Remark
R12	1-249-411-11	CARBON	330	5%	1/4W	
R13	1-249-411-11	CARBON	330	5%	1/4W	
R14	1-247-863-91	CARBON	22K	5%	1/4W	
R15	1-249-429-11	CARBON	10K	5%	1/4W	
R16	1-249-437-11	CARBON	47K	5%	1/4W	
R19	1-249-399-11	CARBON	33	5%	1/4W	F
R21	1-247-807-31	CARBON	100	5%	1/4W	
R22	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R23	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R24	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R25	1-247-807-31	CARBON	100	5%	1/4W	
R26	1-249-411-11	CARBON	330	5%	1/4W	
R27	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R28	1-249-423-11	CARBON	3.3K	5%	1/4W	F
R29	1-249-417-11	CARBON	1.0K	5%	1/4W	F
R30	1-249-417-11	CARBON	1.0K	5%	1/4W	F
R31	1-249-417-11	CARBON	1.0K	5%	1/4W	F
R32	1-249-417-11	CARBON	1.0K	5%	1/4W	F
R33	1-247-807-31	CARBON	100	5%	1/4W	
R34	1-249-429-11	CARBON	10K	5%	1/4W	
R35	1-249-429-11	CARBON	10K	5%	1/4W	
R36	1-249-437-11	CARBON	47K	5%	1/4W	
R37	1-249-417-11	CARBON	1.0K	5%	1/4W	F
R41	1-249-429-11	CARBON	10K	5%	1/4W	
R43	1-249-423-11	CARBON	3.3K	5%	1/4W	
R44	1-249-423-11	CARBON	3.3K	5%	1/4W	
R46	1-249-442-11	CARBON	510	5%	1/4W	
R47	1-249-399-11	CARBON	33	5%	1/4W	F
R48	1-249-423-11	CARBON	3.3K	5%	1/4W	F
R49	1-249-393-11	CARBON	10	5%	1/4W	F
R50	1-249-429-11	CARBON	10K	5%	1/4W	
R51	1-249-441-11	CARBON	100K	5%	1/4W	
R52	1-249-429-11	CARBON	10K	5%	1/4W	
R53	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R54	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R99	1-249-399-11	CARBON	33	5%	1/4W	F
		< VARIABLE RESISTOR >				
RV41	1-238-600-11	RES, ADJ, CARBON 10K				
RV42	1-238-601-11	RES, ADJ, CARBON 22K				
		< TERMINAL >				
TM1	1-537-238-21	TERMINAL BOARD (ANTENNA)				
		< VIBRATOR >				
X21	1-567-713-11	VIBRATOR, CRYSTAL (4.5MHz)				
X41	1-577-075-11	OSCILLATOR, CERAMIC (456kHz)				
X42	1-760-220-11	FILTER, CERAMIC (10.7MHz)				
X43	1-527-981-00	FILTER, CERAMIC (450kHz)				

****

TRANSFORMER

Ref. No.	Part No.	Description	Remark
*	1-659-332-11	TRANSFORMER BOARD	
		**********	
		< CONNECTOR >	
* CN1600	1-564-525-11	PLUG, CONNECTOR 10P	
CN1601	1-564-321-00	PIN, CONNECTOR 2P	
		< FUSE >	
⚠F1603	1-532-503-31	FUSE,TIME-LAG (1.6A 250V)	(E,JE,EA,HK,SP,TW,IA)
		< FUSE HOLDER >	
FH1603	1-533-223-11	HOLDER, FUSE (E,JE,EA,HK,SP,TW,IA)	
FH1604	1-533-223-11	HOLDER, FUSE (E,JE,EA,HK,SP,TW,IA)	
		< TRANSFORMER >	
⚠T1601	1-429-438-11	TRANSFORMER,POWER (AEP,UK,G,IT,EE)	
⚠T1601	1-429-465-11	TRANSFORMER,POWER	(E,JE,EA,HK,MY,SP,TW,IA,TH)
		< SWITCH >	
⚠VS1601	1-572-675-11	SWITCH, POWER VOLTAGE CHANGE (VOLTAGE SELECTOR)(E,JE,EA,HK,SP,TW,IA)	
		**********	
		MISCELLANEOUS	
		**********	
4	1-751-086-11	WIRE (FLAT TYPE)(13 CORE)(TH)	
4	1-773-012-11	WIRE (FLAT TYPE)(15 CORE)(EXCEPT TH)	
6	1-769-946-11	WIRE (FLAT TYPE)(11 CORE)	
7	1-769-940-11	WIRE (FLAT TYPE)(11 CORE)	
8	1-773-158-11	WIRE (FLAT TYPE)(21 CORE)	
9	1-776-166-11	WIRE (FLAT TYPE)(19 CORE)	
52	1-537-770-21	TERMINAL BOARD, GROUND	
⚠58	1-569-007-11	ADAPTER, CONVERSION 2P (E,JE)	
⚠58	1-569-008-11	ADAPTER, CONVERSION 2P (EA,SP,TW,IA)	
⚠58	1-770-019-11	ADAPTOR, CONVERSION PLUGJ(HK)	
203	1-452-719-11	MAGNET ASSY	
⚠301	8-848-367-11	OPTICAL PICK-UP KSS-213BA/F-NP	
302	1-769-069-11	WIRE (FLAT TYPE)(16 CORE)	
⚠CNP1601	1-575-651-11	CORD, POWER (EXCEPT UK,E,JE,TH)	
⚠CNP1601	1-575-653-11	CORD, POWER (E,JE)	
⚠CNP1601	1-751-326-31	CORD, POWER (TH)	
⚠CNP1601	1-751-520-21	CORD, POWER (UK)	
⚠F1601	1-532-504-31	FUSE, TIME LAG (4.0A 250V)	
⚠F1602	1-532-504-31	FUSE, TIME LAG (4.0A 250V)	
⚠F1603	1-532-503-31	FUSE, TIME LAG (1.6 A 250V)	(E,JE,EA,HK,SP,TW,IA)
FL501	1-517-489-11	INDICATOR TUBE, FLUORESCENT	
HP101	1-500-093-11	HEAD, MAGNETIC (PLAYBACK)	
HRPE101	1-500-094-11	HEAD, MAGNETIC (REC/PB/ERASE)	
M1	X-3371-223-1	MOTOR ASSY (CAPSTAN)	
M2	A-2004-410-A	MOTOR ASSY (TRIGGER)	
M101	X-4917-523-4	MOTOR ASSY (SPINDLE)	
M102	X-4917-504-1	MOTOR ASSY (SLED)	
M903	A-4604-363-A	MOTOR (L) ASSY (LOADING)	
S101	1-572-085-11	SWITCH, LEAF (LIMIT)	
⚠T1601	1-429-438-11	TRANSFORMER, POWER (AEP,UK,G,IT,EE)	
⚠T1601	1-429-465-11	TRANSFORMER, POWER	(E,JE,EA,HK,MY,SP,TW,IA,TH)
		ACCESSORIES & PACKING MATERIALS	
		**********	
*	4-981-032-01	CUSHION (FRONT)	
*	4-981-033-01	CUSHION (REAR)	
		**********	
		HARDWARE LIST	
		**********	
#1	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
#2	7-682-548-04	SCREW +BVTT 3X8 (S)	
#3	7-685-650-79	SCREW +BVTP 3X16 TYPE2 IT-3	
#4	7-621-775-10	SCREW +B 2.6X4	
#5	7-621-255-15	SCREW +P 2X3	
#6	7-685-131-19	SCREW +BTP 2.6X4 TYPE2 N-S	
#7	7-685-534-19	SCREW +BTP 2.6X8 TYPE2 N-S	
#8	7-623-921-01	RING, RETAINING, CAPSTAN	
#9	7-621-775-00	SCREW +B 2.6X3	
#10	7-685-533-19	SCREW +BTP 2.6X6 TYPE2 N-S	
#11	7-621-770-67	SCREW +BVTT 2.6X6 (S)	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

MHC-551/G55

SERVICE MANUAL

AEP Model
UK Model
MHC-551

E Model
Tourist Model
MHC-G55

• MHC-551/G55 are composed of following models.
As for the service manual, it is issued for each component model, then, please refer to it.

COMPONENTS MODEL NAME FOR MHC-551/G55

	MHC-551/G55
COMPACT DISC DECK RECEIVER SYSTEM	HCD-H551
SPEAKER SYSTEM	SS-H551

SPECIFICATIONS

General

Power requirements
AEP,UK,German,Italian,East European models :
220 – 230V AC, 50/60Hz
Malaysia model :
220 – 240V AC, 50/60Hz
Thailand model :
220V AC, 50/60Hz
OTHER models :
110 – 120V or 220 – 240V AC, 50/60Hz
Adjustable with the voltage selector

Power consumption
67W

Supplied accessories

AM loop aerial (1)
Remote RM-SD50 (1)
Sony SUM-3 (NS) batteries (2)
FM lead aerial (1)

Design and specifications are subject to change without notice.

COMPACT Hi-Fi STEREO SYSTEM

SONY®

MICROFILM

PARTS LIST

NOTE :
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- Abbreviations

IT	: Italian model	HK	: Hong Kong model
G	: German model	TW	: Taiwan model
EE	: East European model	IA	: Indonesian model
EA	: Saudi Arabia model	TH	: Thailand model
MY	: Malaysia model	JE	: Tourist model
SP	: Singapore model		

	Part No.	Description	Remark
		ACCESSORIES & PACKING MATERIALS	
	1-501-374-11	ANTENNA, LOOP	
	1-501-594-11	ANTENNA (FM) (AEP, UK, G, IT, EE)	
	1-501-659-11	ANTENNA (FM) (E, EA, MY, SP, HK, TH, TW, JE)	
	1-501-659-41	ANTENNA (FM) (IA)	
	3-810-948-11	MANUAL, INSTRUCTION (ENGLISH, FRENCH, SPANISH, CHINESE) (E, EA, MY, SP, HK, TW)	
	3-810-948-21	MANUAL, INSTRUCTION (ARABIC) (E, EA)	
	3-810-948-31	MANUAL, INSTRUCTION (ENGLISH, PORTUGUESE, RUSSIAN) (JE)	
	3-810-948-41	MANUAL, INSTRUCTION (ENGLISH) (UK)	
	3-810-948-51	MANUAL, INSTRUCTION (ENGLISH, FRENCH, SPANISH, PORTUGUESE) (AEP)	
	3-810-948-61	MANUAL, INSTRUCTION (GERMAN) (G)	
	3-810-948-71	MANUAL, INSTRUCTION (GERMAN, DUTCH, ITALIAN) (AEP, IT)	
	3-810-948-81	MANUAL, INSTRUCTION (DANISH, FINNISH, SWEDISH) (AEP)	
	3-810-948-91	MANUAL, INSTRUCTION (ENGLISH, POLISH, RUSSIAN) (EE)	
	3-856-279-11	MANUAL, INSTRUCTION (ENGLISH, FRENCH, SPANISH, CHINESE) (IA)	
	3-856-776-11	MANUAL, INSTRUCTION (ENGLISH, THAI) (TH)	
	4-979-371-01	COVER, BATTERY (for RM-SD50)	
*	4-981-032-01	CUSHION (FRONT) (HCD)	
*	4-981-033-01	CUSHION (REAR) (HCD)	
*	4-981-329-01	CUSHION (SS)	
*	4-982-979-01	INDIVIDUAL CARTON (E, MY, SP, HK, TW)	
*	4-982-980-01	INDIVIDUAL CARTON (EA, JE)	
*	4-982-981-01	INDIVIDUAL CARTON (AEP, UK, G, IT, EE)	
*	4-984-120-01	INDIVIDUAL CARTON (HCD) (TH)	
*	4-984-335-01	INDIVIDUAL CARTON (HCD) (IA)	
	8-917-537-90	REMOTE COMMANDER (RM-SD50)	

Sony Corporation
Consumer A&V Products Company
Home A&V Products Div.

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Printed in Japan
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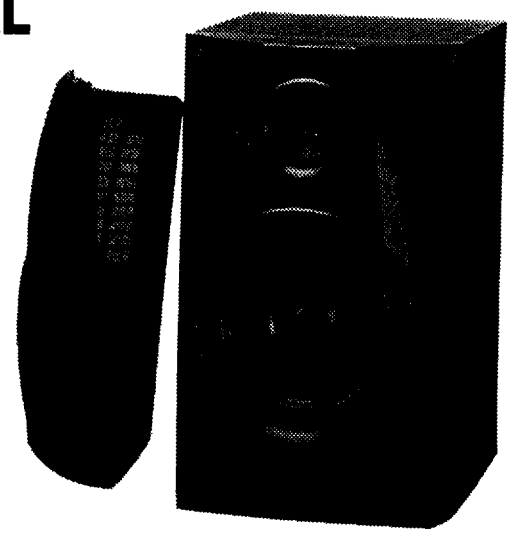
SS-H551

SERVICE MANUAL



US Model
Canadian Model
AEP Model
UK Model
E Model
Australian Model
Tourist Model

This set is the speaker system in MHC-551/G55/331/D2/G33.

SPECIFICATIONS

Speaker system	2-way system, bass reflex type
Speaker units	Woofer : 15 cm dia., cone type
	Tweeter : 5 cm dia., cone type
Nominal impedance	6 ohms
Dimensions	Approx. 195 × 325 × 275 mm (7 3/4 × 12 7/8 × 10 7/8 in)(w/h/d)
Mass	Approx. 3.5 kg (7 lb 11oz) per speaker

Design and specifications are subject to change without notice.

MICROFILM

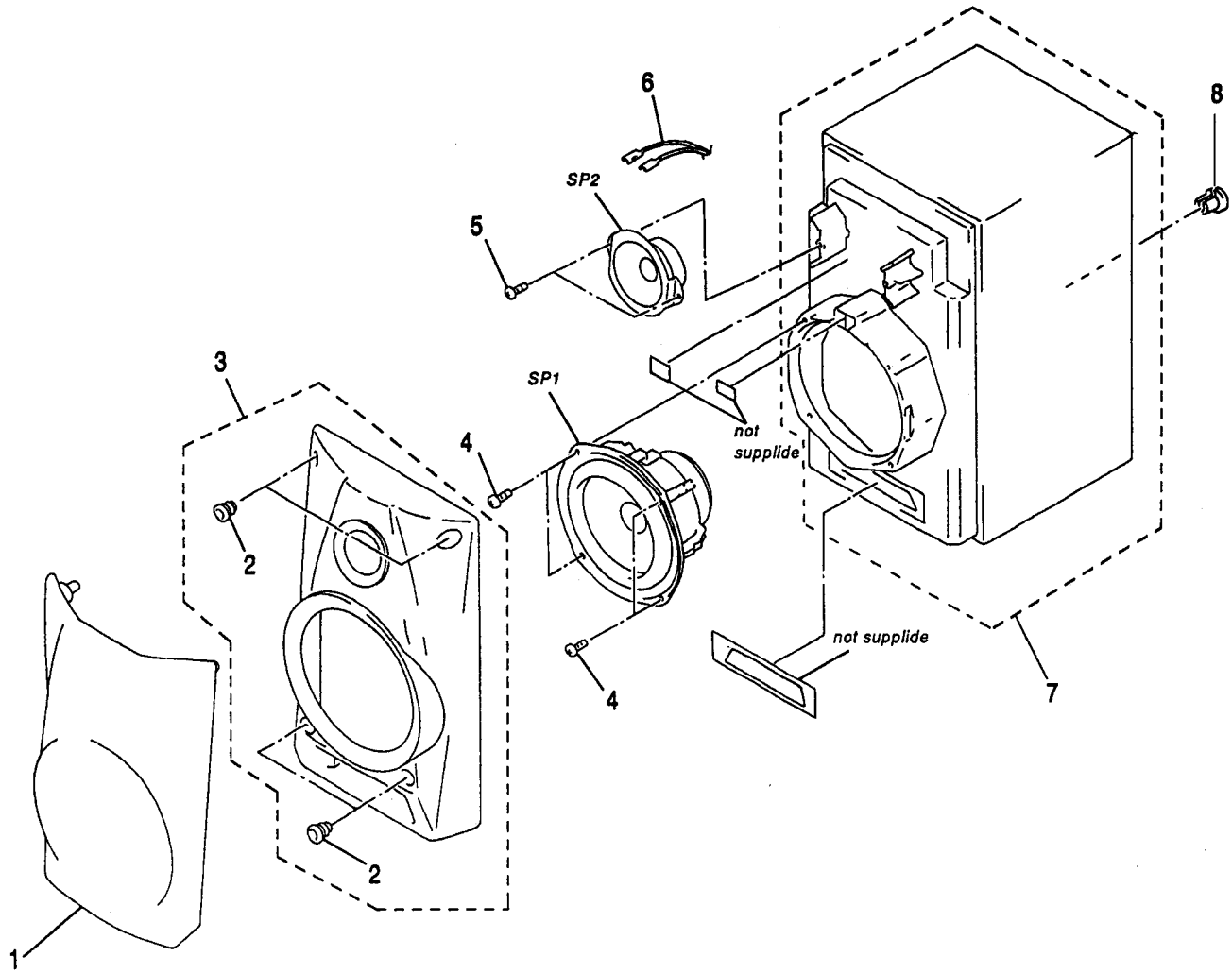
2-WAY SPEAKER SYSTEM

SONY®

EXPLODED VIEW AND PARTS LIST

NOTE :

- Items marked " * "are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Abbreviation
  G : German
  AED : Finland, Norway, Denmark, Sweden



Ref. No.	Part No.	Description	Remark
1	X-4946-809-1	FRAME ASSY, GRILLE	
2	4-951-733-01	CATCHER	
3	X-4946-808-1	PANEL ASSY, FRONT	
4	4-949-145-01	SCREW +BVTP 3.5×18	
5	7-685-646-79	SCREW +BVTP 3×8	
6	1-776-516-11	CORD, SPEAKER	
7	A-4361-943-A	CABINET ASSY, SPEAKER (G, AED)	
7	A-4361-945-A	CABINET ASSY, SPEAKER (EXCEPT G, AED)	

Ref. No.	Part No.	Description	Remark
8	4-942-138-01	CLAMP	
SP1	1-505-235-11	SPEAKER (15cm)	
SP2	1-505-227-11	SPEAKER (5cm) (EXCEPT INDONESIAN)	
SP2	1-505-229-11	SPEAKER (5cm) (INDONESIAN)	
**********			
		ACCESSORIES & PACKING MATERIALS	
		**********	
*	4-981-329-01	CUSHION	

9-960-586-11

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Consumer A&V Products Company
Home A&V Products Div.

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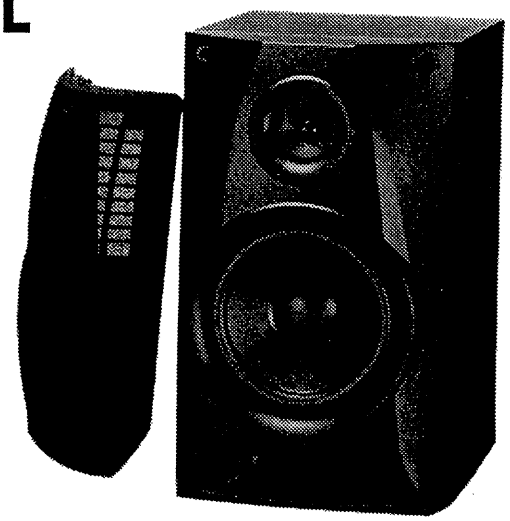
Quality Engineering Dept.

SS-H551

SERVICE MANUAL



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2-WAY SPEAKER SYSTEM

SONY®

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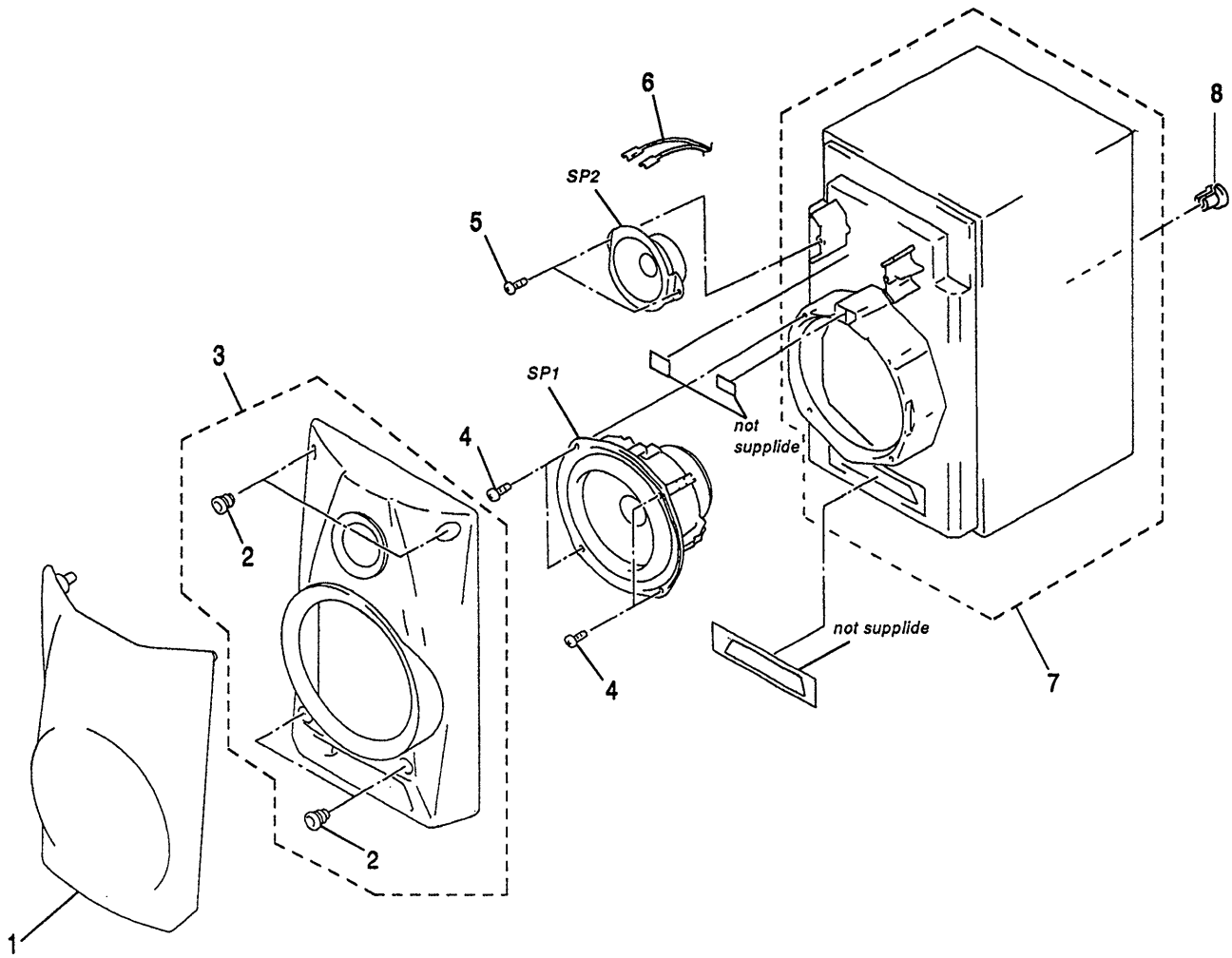

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**********			
		ACCESSORIES & PACKING MATERIALS	
		**********	
*	4-981-329-01	CUSHION	

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